TRANSCRIPT OF RECORD.

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 190[illegible]

No. [illegible] 14

HERMAN FRASCH, APPELLANT AND PLAINTIFF IN ERROR,

vs.

FREDERICK I. ALLEN, COMMISSIONER OF PATENTS.

APPEAL FROM AND IN ERROR TO THE COURT OF APPEALS OF THE DISTRICT OF COLUMBIA.

FILED JANUARY 25, 1907.

(20,546)

(20,546.)

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OCTOBER TERM, 1906.

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In the Court of Appeals of the District of Columbia.

In the Matter of the Application of HERMAN FRASCH. No. 323, Patent Appeal Docket.

1 *In re* Application of HERMAN FRASCH, Serial No. 736,843, Filed November 13, 1899, for Improvements in Means for Removing Incrustation of Calcium Sulphate from Brine-heating Surfaces.

To the Court of Appeals of the District of Columbia:

Your petitioner, Herman Frasch, formerly of Cleveland, in the county of Cuyahoga, and State of Ohio, respectfully represents:

That he is the original and first inventor of certain new and useful improvements in means for removing incrustation of calcium sulphate from brine-heating surfaces.

That on the 13th day of November, 1899, in the manner prescribed by law, he presented his application to the Patent Office, praying that a patent be issued to him for the said invention.

That such proceedings were had in said office upon said application that on the 12th day of July, 1905, it was rejected by the Commissioner of Patents and a patent for said invention was refused him.

That on the 28th day of August, 1905, your petitioner, pursuant to sections 4912 and 4913, Revised Statutes of the United States, gave notice of his appeal to this honorable court from his refusal to issue a patent to him for said invention upon said application as aforesaid, and filed with him, in writing, the following reasons of appeal:

First. Said decision necessarily involves the finding of an existent invalid statute, to wit, of a statute for securing two exclusive rights in the one and the same constitutional discovery.

2 Second. In rendering said decision the Commissioner exercised an invalid authority. Among many particulars the following are here set forth by way of example, namely:

A. He exercised an original and consequently an invalid authority when his only authority was appellate. That is to say, in passing upon an appeal from an adverse decision of the examiner, affirmed by the examiner-in-chief, he exercised the invalid authority of reviewing and reversing a decision of the examiner favorable to applicant (appellant), as to which decision, because it was favorable to applicant, no appeal could be taken and as to which no appeal had, in fact, been attempted.

B. He exercised the invalid authority of forbidding to join in the claim matters which the statute directs to be so joined, provided the applicant does, in fact (as the present applicant does, in fact), claim the same as his invention and discovery.

C. He exercised the invalid authority of rejecting the present application because of its conformity with the statute and not from any lack of such conformity.

D. He exercised the invalid authority of adding to the statutory conditions for joining claims in one application and patent, thus taking upon himself powers conferred by the Constitution solely upon Congress.

E. He exercised the invalid authority of virtually re-enacting in the form of a ruling a rule held invalid by the Supreme Court U. S.

F. He exercised the invalid authority of forbidding to join in one application claims which cannot validly be secured in separate patents under the Constitution and existing constitutional laws of the United States.

3 Third. The Commissioner erred in requiring claim 1 to be divided from claims 4, 5 and 6. Among many particulars of error, the following are here presented by way of example, namely:

A. He erred in finding that a valid statute exists which requires, directs, or allows two exclusive rights, one in the process of applicant's claim 1 and another in the apparatus of his claims 4, 5 and 6, substantially as the same are, respectively, described in applicant's specification.

B. He erred in requiring said division, in view of the statutory requirement that the written description of the process of claim 1 and the manner of using said process must include the apparatus also of claims 4, 5 and 6.

C. He erred in requiring said division, in view of the statutory requirement that the written description of the apparatus of claims 4, 5 and 6 and the manner of using said apparatus must include the process also of claim 1.

D. He erred in requiring said division, in view of the fact that the whole truth relative to each of the matters to be divided includes the other also.

E. He erred in requiring said division, in view of the fact that claim 1 and claims 4, 5 and 6 cover, respectively, "the art described and the means of making it useful" (United States *v.* Allen, C. D., 1904, 703, 711).

F. He erred in requiring said division, in view of the connection in their design and operation of the process of claim 1 and the apparatus of claims 4, 5, 6.

G. He erred in requiring said division, in view of the relationship to each other of the process of claim 1 and the apparatus

4 of claims 4, 5, 6.

H. He erred in holding that division is proper between process claims and apparatus claims in all cases where "the process may

be performed without using the particular apparatus disclosed and that the particular apparatus may be used without performing the process" (page 2 of original typewritten decision); since one of two things, each capable of separate use, may, nevertheless, be dependent upon the other of them for the accomplishment of a particular useful result. Moreover, the use of which each may be separately capable may be wholly foreign to any design or even knowledge on the part of the applicant; or, if within his knowledge and design, might be new matter in his specification.

I. He erred in finding that the process of claim 1 "may be performed without using the particular apparatus disclosed." It cannot be so performed; although modification of such apparatus would be consistent with the performance of the process.

J. He erred in failing to find (or, if he does so find, in failing to give effect to the finding) that the process of claim 1 cannot be performed in the "best mode" (sec. 4888, R. S.) contemplated by the inventor, without employing the apparatus of claims 4, 5, 6.

K. He erred in finding with reference to the process of claim 1 and the apparatus of claims 4, 5, 6, "that the particular apparatus
5 may be used without performing the process." It cannot be so used.

L. He erred in failing to find (or, if he so found, in failing to give effect to the finding) that the apparatus of claims 4, 5, 6, cannot be used according to the manner of using it, required by section 4888, R. S., to be disclosed, without performing the process of claim 1.

M. He erred in failing to find (or, if he so found, in failing to give effect to the finding) that the process of claim 1 cannot be performed "substantially as described" without employing the apparatus of claims 4, 5, 6.

N. He erred in failing to find (or, if he so found, in failing to give effect to the finding) that the apparatus of claims 4, 5, 6 cannot be used "substantially as described" without performing the process of claim 1.

O. He erred in finding that claim 1 should be divided from claims 4, 5, 6.

P. He erred in failing to find that claim 1 and claims 4, 5, 6 are properly joined in the same application.

Fourth. The Commissioner erred in requiring claim 1 to be divided from claims 2 and 3. Among many particulars of error, the following are here presented by way of example, namely:

A. He erred in reviewing the favorable decision of the examiner that claims 1, 2 and 3 were properly joined in the same application over which decision he had, and has, no authority.

B. He erred in finding that a valid statute exists which requires, directs or allows two exclusive rights, one in the process of claim 1 and another in the process of claims 2 and 3, substantially
6 as the same are respectively, described in applicant's specification.

C. He erred in requiring said division, in view of the fact that the "best mode" of performing claim 1 is identical with what is specified in claims 2 and 3.

D. He erred in requiring said division, in view of the fact, asserted in the decision itself, that "claims 2 and 3 include the limitations of claim 1" (middle of page 3 of original typewritten decision).

E. He erred in requiring said division, in view of the fact that the whole truth relative, respectively, to claim 1 and claims 2 and 3 includes all that is specified in the three claims.

F. He erred in requiring said division, in view of the connection in their design and operation of claim 1 and claims 2 and 3.

G. He erred in requiring said division, in view of the fact that claim 1 is merely a more general (generic) statement of the same process which is more particularly (specifically) stated in claims 2 and 3.

H. He erred in requiring said division, because of the fact that claims 2 and 3 are indivisible from claims 4, 5, 6. The natural conclusion from such fact is that claims 1, 2, 3, 4, 5 and 6 should all be included in the same application.

I. He erred in finding that claim 1 should be divided from claims 2 and 3.

J. He erred in failing to find that claim 1 and claims 2 and 3 are properly joined in the same application.

Fifth. The Commissioner erred in requiring claim 1 to be
7 divided from the "indivisible" body of the five remaining claims. Among many particulars of error, the following are here presented by way of example, namely:

A. Having found claims 2 and 3 to be indivisible from claims 4, 5, 6, he erred in even considering the propriety of including or excluding claim 1 also; for the right to join the latter in one application with claims 2 and 3 had been settled in applicant's (appellant's) favor by the decision of the primary examiner, which the Commissioner was, and is, without authority to review.

B. He erred in finding that a valid statute exists which requires, directs or allows two exclusive rights, one in the process of claim 1 and the other in the "indivisible" process and apparatus of the five remaining claims.

C. He erred in requiring said division, in view of the statutory requirement that the written description of the process of claim 1 and the manner of using said process must include both the process of claims 2 and 3 and the apparatus of claims 4, 5, 6.

D. He erred in requiring said division, in view of the fact that the written description of the process of claims 2 and 3 and the apparatus of claims 4, 5, 6 and the manner of using said process and apparatus must include also the process of claim 1.

E. He erred in requiring said division, in view of the fact that the whole truth relative to the process of claim 1, as also the whole truth relative to the "indivisible" process and apparatus of the five

remaining claims, includes everything which is specified in the six claims of the application.

F. He erred in requiring said division, in view of the fact
8 that claims 2, 3, 4, 5, 6 cover the best mode of carrying out the process of claim 1 and the means of making the same useful.

G. He erred in requiring said division, in view of the findings in the decision itself that claims 2 and 3 include the limitations of claim 1 and are also themselves indivisible from claims 4, 5, 6.

H. He erred in requiring said division, in view of the fact that claim 1 is merely a more general (generic) statement of the same process which is more particularly (specifically) set forth in claims 2 and 3, which latter the decision itself finds to be "indivisible" from claims 4, 5, 6.

I. He erred in requiring said division, in view of the connection in their design and operation of the process of claim 1 and the "indivisible" process and apparatus of the five remaining claims.

J. He erred in requiring said division, in view of the relationship to each other of the process of claim 1 on the one hand and the "indivisible" process and apparatus of the five remaining claims on the other.

K. He erred in requiring said division on the ground that the process of claim 1 and the apparatus of claims 4, 5, 6 are capable of separate use, not only for the reason set forth above under letter H of reason third and to be taken as here repeated, but also because said process and said apparatus are bound together by claims 2 and 3, which by the decision of the Commissioner are "indivisible" from claims 4, 5, 6, and by the decision of the primary examiner are rightfully joined with claim 1.

L. He erred in finding that claim 1 should be divided from claims 2, 3, 4, 5, 6.

9 M. He erred in failing to find that claim 1 and claims 2, 3, 4, 5, 6 are properly joined in the same application.

Sixth. The Commissioner erred in failing to find, with respect to the matters required by him to be divided, that "the law does not favor the multiplication of applications and of patents for devices so closely related to each other, when they can properly be included in one application and in one patent." (Court of Appeals, D. C., in Norden v. Spaulding, 114 O. G., 1828, bottom of column 1 and top of column 2 of page 1829.)

Seventh. The Commissioner erred in affirming as to claim 1 the decision of the examiner-in-chief requiring that claims 1, 2, 3 be divided from claims 4, 5, 6.

Eighth. The Commissioner erred in construing applicant's claims. Among many particulars of error in this regard, the following are here presented by way of example, namely:

A. He erred in considering the claims as if each was an inde-

pendent document and in failing to take them in their statutory sense of *particularly pointing out* what is deemed new and original in the antecedent statutory description.

B. He erred in defining the process of claim 1 as if the "incrusted surfaces of heat conducting walls" (lines 5 and 6 of page 2 of original typewritten copy) were natural objects, instead of
10 things, to be obtained by heating an incrusting fluid (brine) in contact with said surfaces by conduction of heat through the wall from a heating medium (steam) in contact with its opposite face. The process of claim 1 is necessarily dependent upon a previous conductive heating (by steam) of an incrusting fluid (brine). The means for making useful the process of claim 1 must consequently include means whereby the heating is performed from which the incrustation to be removed results. The gist of claim 1, as of the five remaining claims, is utilization of condensing steam in the double role which it performs at one and the same time on opposite sides of heat-conducting walls, on one side by contact and on the other by conduction, in an incrustation removal which is concurrent with a conductive heat.

C. He erred in finding that claims 2 and 3 are any more limited than is claim 1 to the alternate application of fluid to each side of the heat-conducting walls. It is a condition of removing incrustation in all cases and certainly when performed "substantially as de-described" that the incrustation-removing fluid (steam) and the incrusting fluid (brine) should be applied alternately to the same surfaces. In order to remove incrustation by condensation of steam in contact therewith, in consequence of carrying off the heat from the opposite sides of the heat-conducting walls, it is a condition in practically all cases and certainly when said removal is performed "substantially as described" that the heating medium (steam) and the heat-removing medium (brine) should be applied alternately to the same face of the heat-conducting walls.

D. He erred in finding in claims 2 and 3 any statement as
11 to "where and when the process of removing incrustations by the condensation of steam thereon is applied in the operation of specific apparatus" (lines 20–22 of original typewritten decision). The necessity for apparatus is brought about by the laws of nature, not by statements in the claims, as the Commissioner alleges.

E. He erred in attaching no significance to, and in effect eliminating, the words *steam* and *brine* which occur in the apparatus claims (4, 5, 6). An electric wire is not a fence wire (Colgate v. Western Union Telegraph Co., C. D., 1878, 440).

"The point of the invention is not the mere mechanical covering of a metallic wire with gutta percha, as a mechanical protection from abrasion or injury from without, or for any purpose aside from a use of the covered wire as a conductor of electricity. The claim is substantially a claim to the use, as a conductor of electricity, of a metallic wire insulated by gutta percha by the means and in the manner described in the specification. The claim is valid, even

though a metallic wire covered with gutta perch existed before the plaintiff's invention." * * * (C. D., 1878, 442.)

Rosell v. Allen, C. D., 1900, 333, was an interference case before the Court of Appeals, D. C., having as an issue "a tanning bath containing sulphites, bisulphites or hyposulphites of chromic oxid."

There was no suggestion that this was a claim for the
12 sulphites, bisulphites or hyposulphites themselves or for any bath containing them except a bath for tanning skins. A steam pipe is a pipe leading from a source of steam (a pipe conveying steam or virtually so): and a brine conduit similarly is one leading from a source of brine (conduit conveying brine or virtually so). The steam generator and the brine source are not illustrated by applicant here; it is unnecessary that they should be; "That which is common or well known is as if it were written out in the patent and delineated in the drawings" (Webster Loom Co. v. Higgins, C. D., 1882, 285, 290).

That the Commissioner of Patents has furnished him a certified transcript of the record and proceedings relating to said application for patent, which transcript is filed herewith and is to be deemed and taken as a part hereof.

Wherefore your petitioner prays that his said appeal may be heard upon and for the reasons assigned therefor to the Commissioner as aforesaid, and that said appeal may be determined and the decision of the Commissioner be revised and reversed, that justice may be done in the premises.

HERMAN FRASCH,
By CHAS. J. HEDRICK,
His Attorney.

CHAS. J. HEDRICK,
Solicitor and of Counsel.

13 2–389.

UNITED STATES OF AMERICA,

[Vignette.]

DEPARTMENT OF THE INTERIOR, PATENT OFFICE.

To all persons to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the records of this office of a stipulation of counsel, filed October 6, 1905, respecting the record for the court in the matter of the application of Herman Frasch, filed November 13, 1899, serial number 736,843, for "improvement in means for removing incrustation of calcium sulphate from brine heating surfaces;" and of the proceedings in the Patent Office in said application, subsequent to the order of the court dismissing the former appeal without prejudice for lack of jurisdiction.

Cost of this copy is $26.90 and has been paid.

A printed copy of the transcript in said former appeal No. 201 is also annexed.

Seal Patent Office, United States of America.

In testimony whereof I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the city of Washington this 6th day of October, in the year of our Lord one thousand nine hundred and five and of the Independence of the United States of America the one hundred and thirtieth.

F. I. ALLEN,
Commissioner of Patents.

14 *In re* Application of Herman Frasch, Serial Number 736,843, Filed November 13, 1899, for Improvements in Means for Removing Incrustation of Calcium Sulphate from Brine-heating Surfaces.

It is stipulated by the Commissioner of Patents and the appellant (Herman Frasch) that the record for the court in the matter of the appeal taken on August 28, 1905, shall consist of a printed copy of the transcript of record in patent appeal docket No. 201 (appeal taken March 4, 1902) and a certified copy of the proceedings in the Patent Office subsequent to the order of the court dismissing the former appeal, without prejudice for lack of jurisdiction, in accordance with the opinion of the court reported in 20 App., D. C., 298.

JOHN M. COIT,
Counsel for Com'r Patents.
CHAS. J. HEDRICK,
Counsel for Herman Frasch.

Washington, D. C., October 4, 1905.

[Endorsed:] Docket clerk, U. S. Patent Office, Oct. 6, 1905.

In the Court of Appeals of the District of Columbia

In the Matter of the Application of HERMAN FRASCH. No. 201, Patent Appeal Docket.

1 In the Court of Appeals of the District of Columbia.

In re Application for Patent of HERMAN FRASCH, Serial No. 736,843, Filed November 13, 1899. No. 201, Patent Appeal Docket.

Improvements in Means for Removing Incrustation of Calcium Sulphate from Brine-heating Surfaces.

To the Court of Appeals of the District of Columbia:

Your petitioner, Herman Frasch, formerly of Cleveland, in the county of Cuyahoga and State of Ohio, respectfully represents:

That he is the original and first inventor of certain new and useful improvements in means for removing incrustation of calcium sulphate from brine-heating surfaces.

That on the 13th day of November, 1899, in the manner prescribed by law, he presented his application to the Patent Office, praying that a patent be issued to him for said invention.

That such proceedings were had in said office upon said application as that on the 23d day of January, 1902, it was rejected by the Commissioner of Patents and a patent for said invention was refused him.

That on the 4th day of March, 1902, your petitioner, pursuant to sections 4912 and 4913, Revised Statutes of the United States, gave notice to the Commissioner of Patents of his appeal to this honorable court from his refusal to issue a patent to him for his said invention upon said application, as aforesaid, and filed with

2 him, in writing, the following reasons of appeal:

First. The authority exercised by the Commissioner of Patents, with the approval of the Secretary of the Interior, in establishing or attempting to establish rule 41 is invalid, because unconstitutional. Among the many grounds of unconstitutionality the following few are here set forth by way of example, namely:

A. The rule is in contravention of section I of article I, which section vests all the legislative powers of the Constitution in Congress and not in any executive officer or officers.

B. The rule is in contravention of that paragraph of section VIII of article I, which paragraph grants the power to secure to inventors the exclusive right to their respective discoveries, but said rule operates to deprive inventors whose discoveries cover new processes, re-

quiring new apparatus to make the same practically useful, of the exclusive right to either their said new processes or their said new apparatus, although said processes and said apparatus must both be disclosed by such inventors in order to obtain any exclusive right whatsoever.

C. The rule is in contravention of the clause of article V of the amendments to the Constitution, which forbids any person to be deprived of property without due process of law, inasmuch as by the mere will of an executive officer or officers it deprives the inventors mentioned in paragraph B above of their property in a part of their said discoveries.

Second. The authority exercised by the Commissioner of Patents, with the approval of the Secretary of the Interior, in establishing or attempting to establish rule 41 is invalid, because without warrant of law. Among the many grounds upon which such absence
3 of legal warrant can be urged, the following few are set forth by way of example, namely:

A. The Revised Statutes distinguish clearly between (1) the lawful subject-matter of a patent, (2) the statutory proceedings for obtaining a patent, and (3) the conduct of the said statutory proceedings; the only authority given by any act of Congress is to regulate the *conduct* of the statutory proceedings, but rule 41 is directed toward ascertaining and prescribing what shall be the lawful subject-matter of a patent.

B. Congress has not delegated to the Commissioner of Patents, nor to any executive officer or officers, the making of such a rule as is rule 41.

C. In fact, under the Constitution, Congress could not make such a delegation of power, as the enactment of the said rule would be an exercise of the legislative power.

Third. The authority exercised by the Commissioner of Patents, with the approval of the Secretary of the Interior, in establishing, or attempting to establish, rule 41, is invalid, because the said rule is unreasonable. Among the many grounds of unreasonableness the following few are here set forth by way of example, namely:

A. The inventor *must* invent and *must* disclose matter which the said rule will not allow him to claim in the very patent wherein such disclosure *must* be made, and as a condition precedent to which the said matter *must* be invented.

B. The rule forbids the claiming in one patent of matters which repeated decisions of the Supreme Court U. S. have held to be the proper subjects of distinct claims in the same patent, which that tribunal has never recognized as proper subject-matter for
4 separate patents, and which seem by the pronouncements of the same tribunal to be forbidden to be claimed in separate patents.

C. The rule contemplates two patents identical in the subject-matter invented and disclosed and differing only in the claim.

Fourth. The authority exercised by the Commissioner of Patents, with the approval of the Secretary of the Interior, in establishing or

attempting to establish rule 41 is invalid, because said rule is inconsistent with law. Some of the many grounds of its inconsistency with law are hereinabove set forth and need not be repeated. In addition, the following are here set forth, likewise by way of example, namely:

A. Congress having legislated with respect to the subject-matter of a patent, any alteration, by enlargement or restriction or otherwise, of the statutory provisions is inconsistent therewith.

B. Congress having set forth certain fees and proceedings by which an exclusive right may be secured to one or more specified inventions or discoveries or inventions and discoveries, a rule demanding two or more sets of fees and two or more proceedings is inconsistent with the congressional enactments.

C. The rule forbids what Congress has authorized, namely, one patent for both a new process and the new apparatus by which such process is made of practical usefulness.

D. The rule enjoins what the law forbids, to wit, the establishment of mutually exclusive monopolies.

E. The rule enjoins what the law forbids, to wit, the limitation of the vested and inchoate rights under one patent by a patent
5 subsequent thereto, both in order of issue and in legal effect.

F. The rule contemplates what the law forbids, to wit, the limitation of the inchoate rights of the public under a patent by a second patent subsequent thereto, both in date of issue and in legal effect.

G. The rule contemplates the exercise (in the issue of a second patent) of authority previously exhausted (in the issue of patent earlier in order of issue).

H. The rule denies the right which the law gives to an applicant of formulating his own claim.

I. The rule denies the right which — law gives to an applicant of claiming in a patent whatsoever patentable subject-matter he *must* disclose therein.

K. The rule denies the right which the law gives for such discoveries and inventions as Bell's telephone, Merrill's production of hydrocarbon oils, Neilson's hot blast, and this appellant's incrustation-removing means, namely, the right to one patent "as discoverer for the useful art, process, or method of doing a thing he has found and as inventor for the means he has devised to make his discovery one of actual value."

L. The rule enjoins what the law forbids, to wit, the inclusion "in a subsequent patent" to an inventor of an "invention embraced or described in a prior patent granted to himself."

Fifth. The authority is invalid which the Commissioner exercises in refusing patents to applicants in general and a patent to the present applicant (appellant) in particular unless and until his process claims or else his claims to the new apparatus used in the performance of said process shall be canceled.

6 Said authority is invalid for the following reasons, severally and *collecting:*

(*a*.) It is invalid because unconstitutional.
(*b*.) It is without warrant of law.
(*c*.) It is unreasonable.
(*d*.) It is inconsistent with law.

As some of the many grounds upon which (*a*) unconstitutionality, (*b*) absence of legal warrant, (*c*) unreasonableness, (*d*) inconsistency with law, can and will be urged, those hereinbefore set forth in the paragraphs marked by capital letters under the first, second, third, and fourth reasons of appeal are to be taken as here set forth by way of example.

Sixth. The authority exercised in this case, of requiring applicants in general, and the present applicant in particular, to cancel a part of his claim (or any one or more of his claims) to patentable subject-matter, is invalid, especially when two patents issued—one on the part required to be canceled and the other on the remaining part—would bear to each other the following relationship severally or any two or more or all of them collectively—that is to say:

1. That of two mutually exclusive patents.
2. That of two patents with the same essential specification, neither more nor less, only the *claim* being divided between the two patents.
3. That of two patents for different reflexes or embodiment of the same conception.
4. That of two patents for the process and the apparatus respectively, which process and apparatus were both claimed in Bell's first patent in suit in Dolbear *v.* American Bell Telephone Co., 126 U. S., 1; C. D. 1888, page 322; 43 O. G., 377.

7

5. That of two patents for the process and the apparatus respectively, which process and apparatus were both claimed in the one patent in suit in Merrill *v.* Yeomans, 94 U. S., 568; C. D. 1877, page 270; 11 O. G., 970.
6. That of two patents for respecting Neilson's apparatus and Neilson's method, referred to in O'Reilly *v.* Morse, 15 How., 62.
7. That of two patents for respecting the process and the apparatus of appellant's above-entitled application.

Seventh. The authority is invalid, which was and is exercised by the Commissioner of Patents in this case, of forbidding applicants in general, and this applicant in particular, to claim all and several the new and useful matters of invention required to be disclosed by him or by them respectively in order to the obtainment of any patent whatsoever, and of refusing the application unless and until a part of his or their claim shall be canceled. This authority is invalid for the following reasons, severally and collectively:

(*a*.) It is invalid because unconstitutional.
(*b*.) It is without warrant of law.
(*c*.) It is unreasonable.
(*d*.) It is inconsistent with law.

As some of the many grounds upon which (*a*) unconstitutionality, (*b*) absence of legal warrant, (*c*) unreasonableness, (*d*) inconsistency with law, can and will be urged, those hereinbefore set

forth in the paragraphs marked by capital letters under the first, second, third, and fourth reasons of appeal are to be
8 taken as here set forth by way of example.

Eighth. The authority exercised by the Commissioner of Patents in this case of refusing or holding up applications for patents in general, and the above-entitled application in particular, upon the mere ground that the application contains both process claims and apparatus claims, is invalid, because:

(*a.*) It is unconstitutional.

(*b.*) It is without warrant of law.

(*c.*) It is unreasonable.

(*d.*) It is inconsistent with law, and upon grounds hereinbefore sufficiently set forth, the same to be taken as here repeated.

Ninth. The authority exercised by the Commissioner of Patents in this case, of refusing the above-entitled application upon any ground apparent in the record and proceedings in this case, is invalid, because:

(*a.*) It is unconstitutional.

(*b.*) It is without warrant of law.

(*c.*) It is unreasonable.

(*d.*) It is inconsistent with law, and upon grounds hereinbefore sufficiently set forth, the same to be taken as here repeated.

Tenth. The authority exercised by the Commissioner of Patents in refusing to forward appellant's appeal of December 13, 1901, to the board of examiners-in-chief, or to direct that it be forwarded, is invalid, because:

(*a.*) It is without warrant of law.

(*b.*) It is inconsistent with the statute in such case made and provided.

9 Some of the grounds which can and will be urged in support of these reasons are as follows:

(A). One or more or all of the points set forth in the said appeal *in* the said board were proper to be considered and passed upon by the examiners-in-chief.

(B). It is and was the duty of the said board to determine their own jurisdiction in the first instance, and not the prerogative of the examiner or of the Commissioner of Patents in person.

Eleventh. The Commissioner of Patents erred in holding that applicant (appellant) was not and is not justly entitled under the law to the patent prayed for, because the above-entitled application includes claims to a process and claims to an apparatus, or upon any ground apparent in the record and proceedings in this case.

Twelfth. The Commissioner of Patents erred in holding that because the above-entitled "application includes claims to a process and claims to an apparatus," "therefore the examiner properly required division." If the law authorizes (as it does authorize) one patent including claims to a process and claims to an apparatus, and if it gives (as it does give) to appellant a right to such a patent, it was the duty of the examiner and Commissioner to speed the progress of the application. If, on the other hand, the present applicant

(appellant) had been found claiming (as he is not claiming) more or other than the law authorizes to be secured in the patent to be issued on the above-entitled application, it would have been the duty of the examiner to reject the applicant (or, as the statute puts it, the claim for a patent) on that ground. In any case, if he
10 would not allow the application, it was his duty on the coming in of an appeal to the examiners-in-chief to forward the same to them for their determination of the points involved in the appeal. In no case can the Commissioner of Patents compel an applicant to file a divisional or, in fact, any application whatsoever.

Thirteenth. The Commissioner of Patents erred in holding that a "requirement for division is not an action upon the merits of the application, but is a mere matter of form." So far is it from being a mere matter of form that to secure a patent without the claims to process or to apparatus might be held by the courts to be an absolute abandonment and waiver of those claims, notwithstanding the issue of another patent containing the omitted claims.

In any event, the action is one of the merits.

(*a.*) Because the law gives inventors the right, on payment of one set of fees and the conduct of one proceeding, to secure protection for whatever matters may be authorized by law to be secured in one patent.

(*b.*) Because a patent with both process claims and apparatus claims is manifestly a different grant, as well from one whose claims are solely to process as from one whose claims are solely to apparatus.

(*c.*) Because the courts have repeatedly held claims void by reason of their having been granted in two patents instead of in one.

(*d.*) Because the legal effect of two patents is not the same as that of one patent.

(*e.*) Upon the analogy of the inclusion of two or more inventions in one patent to the inclusion of two or more patents in one
11 bill in equity, an improper inclusion in such bill making it demurrable for multifariousness, and the decision on such demurrer being appealable, when it is against the inclusion, as a final decision on the merits of the bill.

(*f.*) Because submission to the so-called "requirement of division" involving an alteration in the specification in its very essence—that is to say, in the substance of the claim.

Fourteenth. The Commissioner of Patents erred in holding that "a party has no right of appeal to the examiners-in-chief from such a requirement" as the so-called "requirement of division." The statute gives such a party the same right of appeal which it gives to any applicant whose "claim to a patent" may be "rejected."

Fifteenth. The Commissioner of Patents erred in holding that the action in the above-entitled application "is not a refusal of a patent or patents upon the alleged invention or inventions," since obviously he did and does refuse applicant a patent covering as well the new process as the new apparatus.

Sixteenth. The Commissioner of Patents is in error as to the

action on the above-entitled application being in effect "a ruling that the application has not been made in proper form," an "objection to the way in which the matter is presented, and not to the matter itself;" for in point of fact the matter in issue is neither a patent for the process divorced from the apparatus nor a patent for the apparatus divorced from the process, but a patent for the process and apparatus as one patentable discovery and invention, and no suggestion has been made of any change in the form or manner of presenting said matter which would render the present ap-
12 plication more acceptable to the Commissioner of Patents. What he demands is that the applicant (appellant) accept a patent essentially different from that which he asks as his legal right.

Seventeenth. The Commissioner of Patents erred in rejecting above-entitled application for patent.

Eighteenth. The Commissioner of Patents erred in refusing the patent applied for.

That the Commissioner of Patents has furnished him a certified transcript of the record and proceedings relating to said application for patent, which transcript is filed herewith and is to be deemed and taken as a part hereof.

Wherefore your petitioner prays that his said appeal may be heard upon and for the reasons assigned therefor to the Commissioner, as aforesaid, and that said appeal may be determined and the decision of the Commissioner be revised and reversed, that justice may be done in the premises.

HERMAN FRASCH,
By CHAS. J. HEDRICK,
His Attorney.

CHAS. J. HEDRICK,
Solicitor & of Counsel.

13 & 14 3735.

2–389.

UNITED STATES OF AMERICA,

[Vignette.]

DEPARTMENT OF THE INTERIOR, PATENT OFFICE.

To all persons to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the records of this office of the record for the court in the matter of the application of Herman Frasch, filed November 13, 1899 serial number, 736,843—for improvement in means for removing incrustation of calcium sulphate from brine-heating surfaces.

Cost of this copy is $20.25 and has been paid.

Seal Patent Office, United States of America.

In testimony whereof I have hereunto set my hand and caused the seal of the Patent Office to be affixed, at the city of Washington, this 31st day of March, in the year of our Lord one thousand nine hundred and two, and of the

Independence of the United States of America the one hundred and twenty-sixth.

F. I. ALLEN,
Commissioner of Patents.

* * * * * * *

15 *Specification.*

To all whom it may concern:

Be it known, that I, Herman Frasch, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga, and State of Ohio, have invented certain new and useful improvements in means for removing incrustation of calcium sulphate from brine-heating surfaces and I do hereby declare the following to be a full, clear, and exact description of the invention, [such as will enable others skilled in the art to which it appertains to make and use the same].*

16 This invention relates to the removal of the incrustations of calcium sulphate from the heating surfaces of the vessels in which brine or other liquid containing calcium sulphate is heated in order to evaporate the said brine for the recovery of salt therefrom or in order to accomplish some other purpose. This incrustation or scale is very troublesome to the salt-maker, as its presence interferes with the transmission of heat to the brine and its removal is hard. In the evaporation of brine for salt in closed pans (such as vacuum pans for example) it has been customary (in my experience) to draw off the brine twice a day and after filling the pans with water to boil the latter in order to dissolve the common salt in the incrustation and then to scrape the flue walls in order to remove the calcium sulphate. In open pans, it has been the practice to clean the surfaces of the heating pipes once a week by means of hammers. The removal of the incrustation in either of these ways stops the evaporation while it is going on, thus diminishing by so much the output of a given plant, besides being a direct source of expense. The removal by hammering tends moreover to shorten the life of the heating pipes; for even when made extra heavy for the purpose of withstanding the hammering, the repeated blows necessary to remove the coatings are apt in time to split the pipes, so that they leak and have to be replaced.

In addition to the evaporation of brine in pans (open or closed) provided with heating surfaces (usually steam pipes or brine tubes), it has been proposed to heat the brine in one vessel under such

C. J. H. Before execution.

or tension of vapor
pressure A as to prevent evaporation therein and to transfer the so-heated brine to another vessel

C. J. H. Before execution.

or tension of vapor
17 in which the pressure A is removed to a greater or less extent, and evaporation permitted in consequence; but here too there is apt to be formed a trouble- coating of calcium sulphate; for this

[* Words and figures enclosed in brackets erased in copy.]

substance is most soluble in water at about 100° F. (according to authorities the temperature of maximum solubility in water is between 32° C. and 41° C. which correspond respectively with $89\frac{6}{10}$° F. and $105\frac{8}{10}$° F.) and is precipitated by the mere heating of brine containing the same. In fact any heating above the very moderate temperature of maximum solubility of calcium sulphate, whether such heating be with or without evaporation, is apt to result in the incrustation of the heating surfaces with a highly objectionable coating of calcium sulphate.

In accordance with the present inventions, the incrustation of calcium sulphate is removed from the heating surfaces by condensing steam in contact with so-encrusted surfaces; and as an additional improvement, the condensation is effected, and the heat liberated in such condensation is absorbed, by a body of brine on the opposite side of the heat-conducting walls. The heat liberated by the condensation, therefore, need not be wasted but can be utilized in the heating of the brine with or without vaporizing the same. It is found that the incrustation formed in a given time, can be removed by the condensing steam in an equal (if not in a less) time; the removal of the incrustation consequently need not diminish the output of a given plant; for the brine-heating operation can be carried on with practical continuity; although the brine which is undergoing the heating operation occupies the chambers on opposite sides of the heat-conducting walls alternately. The removal can, moreover, be effected without any direct expense and without injury to the apparatus.

18 To carry the invention into effect practically, the chambers on opposite sides of the heat-conducting walls are each provided with inlets for respectively the steam to be condensed and the brine to be heated (with or without evaporation) and with means for withdrawing the water of condensation and the product or products of the brine-heating operation (that is the heated brine if there be no evaporation or the water vapor and the heated brine if evaporation take place without bringing the brine to saturation so as to precipitate salt or the water vapor and the precipitated salt if evaporation of saturated brine be carried on). When, however, the heating of brine (with or without evaporation) in only one of the chambers may be desired, it suffices to provide the other chamber with an inlet and outlet for any cooling medium in addition to the steam-supply pipe and the outlet for the condensed water, which latter outlet may however, if desired, be the same opening which serves for the withdrawal of the cooling medium.

In the accompanying drawings—

Fig. 1 is a vertical section of an apparatus in accordance with the invention, for heating brine with evaporation in the brine-holding chamber;

Fig. 2 is a section of the same apparatus on line A A of Fig. 1 looking in the direction of the arrow; and

Fig. 3 is an elevation of an apparatus, in accordance with the in-

vention, for heating brine without evaporation in the brine-holding chamber.

In both forms of the new or improved brine-heating apparatus, there are two chambers which are separated from each other by the latter heat-conducting walls, which are most advantageously constituted by the walls of suitable pipes. As shown these pipes *a* extend between perforated tube sheets *b* after the manner common in tubular condensers, in the heating belts of vacuum pans, in tubular boilers and other like apparatus; and the chambers are formed by the spaces inside and outside of said pipes *a* respectively. The spaces inside said pipes communicate with one another through the end spaces *c* and *d*. As shown in Figs. 1 and 2, the chamber outside of the pipes is provided with a dome *e*; and a similar dome could be applied to the corresponding chamber of an apparatus for heating without evaporation. Each of the chambers is provided with (1) a valved pipe *f* leading from a source of steam supply, as a steam boiler, the exhaust of a steam-engine, a pump for receiving and compressing exhaust steam, or other suitable source of steam supply, (2) a valved outlet *g* for drawing off the water of condensation, (3) a valved conduit *h* leading from a source of supply of the brine to be heated and (4) means for withdrawing the one or more products of the heating operation. The pipes *f* are shown as formed of branches of a common pipe with a valve in each branch; and the valved outlets *g* for condensed water, as well as the valved conduits *h* for the brine supply are similarly shown; but any suitable arrangement of pipes, outlets or conduits can be used. As it is immaterial to the present invention what becomes of the water of condensation, it is not essential that there should be a pipe or a conduit of any kind for conveying it away; although it would ordinarily and perhaps always be desirable to use such a pipe or conduit.

The conduits for supplying the brine need not be pipes, unless it is desired to introduce the brine under pressure; in other cases troughs would answer. Each chamber has to be closed when it is utilized as the steam-condensing chamber; but it may be open or closed, as may be preferred, when it is utilized as the brine-holding chamber. To remove and to replace a suitable cover (as the top *j* of the heater of Fig. 3, for example) is one way whereby a chamber can be opened when holding brine and closed when holding steam.

In the apparatus of Figs. 1 and 2, (for heating with evaporation of saturated brine) the means for withdrawing the products of the heating operation consist, for each chamber, of a valved vapor outlet *k* and a valved salt outlet *l*. As shown the vapor outlets *k* extend from the small side domes *m* and are united to a common pipe *n*, for leading away the vapors to any desired point of utilization or discharge. The salt outlets are similarly united. If the evaporation is to take place *in vacuo*, the salt outlets have a long leg or other discharging device, such as is used with ordinary vacuum pans.

In the apparatus of Fig. 3 (for heating without evaporation) the product of the heating operation is simply heated brine and the means for withdrawing it consist of a valved conduit *p* for each of the chambers. As shown the arrangement of the pipes marked *h* and *p* respectively, is such that either [the]* pair could be used for introducing the brine to be heated and the other pair for withdrawing the heated brine; and where the heating is without evaporation either pair of conduits could be used either for supply or for discharge.

In operation, brine to be heated, with or without being evaporated as the case may be, is introduced by one of the conduits *h* into the corresponding chamber, (say for example the chamber composed of
the spaces inside of the pipes *a*) and the steam from an appro-
21 priate source is introduced by one of the pipes *f* into the other chamber (to wit, the space surrounding the pipes *a*). The heat of the steam is conducted to the brine through the walls of the pipes *a*, and the steam is at the same time condensed. If the evaporation of the brine is contemplated, the vapor is allowed to escape through the appropriate outlet *k*; and if the brine is, or is allowed to become, saturated, salt is precipitated and accumulates in the salt outlet belonging to the brine-holding chamber; but if the brine is to be heated without evaporation, the heated brine is withdrawn by the appropriate hot-brine conduit *p*; and in any case, the supply of brine is renewed continually with brine from the brine-supply conduit *h*. The salt (when formed) is removed from time to time, or at each reversal, at one of the outlets *l*.

As brine usually holds calcium sulphate in solution, a precipitate of this substance takes place under the action of the heat, or of the heat and evaporation, and forms an incrustation on the heating surfaces of the brine-holding chamber (to wit, on the inside of the pipes *a* in the example above supposed). After any desired interval, with or without waiting for the coating sensibly to impair the conduction of the heat through the walls separating the chambers, the connections are reversed by opening and closing the proper valves, and the steam is introduced into the chamber which has just been emptied of brine and whose walls have become more or less encrusted as aforesaid (to wit, in the example supposed the steam is let into the inside of the pipes *a*) and the brine to be heated (with or without evaporation) is introduced into the other chamber (to wit, the space outside the pipes *a*) which before was
used as the steam space. As before, the steam imparts its
22 heat through the intermediate conducting walls (to wit, of pipes *a*) to the brine of lower temperature on the opposite side of said walls and is condensed. Where evaporation of said brine is to take place, the temperature of its boiling point under the conditions existing in the brine-holding chamber must be below the temperature of steam condensation under the conditions existing in the steam chamber. As the steam condenses in contact with the

[* Words and figures enclosed in brackets erased in copy.]

calcium sulphate incrustation and the water of condensation runs down the same, the calcium sulphate is gradually dissolved and removed, so that the clean metal surfaces are exposed to the steam. In the meanwhile, however, a crust of calcium sulphate has been gradually forming on the brine side (the outside of the pipes *a* in the example supposed) and continues so to form, until the operator considers it advisable to reverse again the steam and brine supplies. Thus the operation of imparting heat to the brine, with or without evaporating the latter, and with or without the precipitation of salt, may proceed continuously, with the steam and the brine alternately on opposite sides of the heating walls.

The water of condensation is withdrawn continuously or at intervals through the appropriate outlet *g*. A In order to empty the chambers (each in its turn) of brine preparatory to the introduction of steam therein, use may be made of the outlets *g*, or of any other suitable openings at the bottom of the respective chambers. Thus an apparatus having salt outlets could have its chambers emptied of brine through them; or if the heated brine be withdrawn from the bottom of the chambers, these can be emptied through the same outlets; or there may be a special brine draw-off for emptying either or each of the chambers.

Any uncondensed steam may escape by the [of]* same outlet *g*.

23 Where evaporation is to take place in a chamber, it is desirable to arrange for the production of a vigorous circulation; and similar dispositions are sometimes wanted where more elevation of temperature is to be effected. In ordinary vacuum pans, one usual way to accomplish this has been to employ a large pipe in the middle of the heating belt. Such a pipe is shown in Figs. 1 and 2 and furnishes a down-flow passage in the chamber formed by the spaces within the pipes; for the chamber surrounding these pipes a down-flow passage is formed by omitting some of the pipes as shown in Fig. 2. The large pipe could of course be placed at one side and the down-flow passage for the surrounding chamber could be formed through the centre; or both passages could be eccentric.

When the brine on the opposite side of the heat-conducting walls is in ebullition, the transfer of heat through the conducting walls takes place most rapidly and the condensation of steam is most rapid; and there is a certain fitness therefore, when evaporation is carried on in one chamber, in carrying it on also in the other chamber; but, if desired, evaporation can be carried on in one chamber and heating without evaporation in the other, and the apparatus can be adapted to such working. For example, if the apparatus of Fig. 3 be provided (as is the apparatus of Figs. 1 and 2) with a vapor outlet for the end space *c* and a salt outlet for the end space *d*, one of the hot-brine conduits (to wit the conduit for the chamber formed by the spaces inside the pipes) could be omitted. A similar apparatus would be formed if in the apparatus of Figs. 1 and 2 either of

[* Words and figures enclosed in brackets erased in copy.]

the chambers should be provided with a heated-brine outlet,
24 the vapor and salt outlets for this chamber being dispensed with and the inlets and outlets of the other chamber remaining as shown. Other arrangements will suggest themselves.

In any such case, the steam would be condensed in contact with the incrustation in one chamber by the transfer of its heat through the walls to the brine on the opposite side of said walls in order (mainly, and it may be simply) to evaporate the water from said brine; while in the other chamber it would be condensed in contact with incrustation on its side of said walls by the transfer of its heat through said walls to the brine on the opposite side in order to raise the sensible temperature of said brine. Should it require a longer time to remove the incrustation left by the evaporation that that formed by simple heating, the simple heating may be carried on for a longer time. This arrangement (to wit a brine-evaporating chamber on one side the heat-conducting walls and a brine chamber for heating without evaporation on the other) may be desirable for adapting most readily the ordinary vaccum pan, or steam-closed evaporating pan, for operation in accordance with the present invention by adding a steam inlet and a condensed-water outlet to the ordinary brine-holding chamber and a brine inlet and outlet to the ordinary steam space of the heating belt.

In order to condense the steam in contact with the surfaces incrusted with calcium sulphate, it is essential to have a heat-absorbing medium on the opposite side of the heat-conducting walls; and it is an advantage and special improvement to utilize the brine to be heated (with or without evaporation) as such medium by placing it alternately on the opposite sides of said walls; but if it
25 should be preferred to forego the special advantage of this mode, the heat-absorbing medium can be otherwise constituted and the heat absorbed can be utilized in any desired way. If plain water for example were supplied to the outside of heating pipes whose inside surfaces had been encrusted with calcium sulphate and were exposed to steam, the steam could be condensed in contact with the so-encrusted surfaces in imparting to the water the heat necessary to vaporize the same or to raise its temperature: in such case, the water being free from calcium sulphate, there would be no incrustation on the outside of the pipes; and when the steam should be again admitted to the outside of the pipes, to evaporate or to heat without evaporating the brine inside the same, there would be no incrustation to be removed; so that the incrustation-removing and evaporating operation would be performed only in heating a brine within the pipes. The hot water or the steam could be utilized as it is customary to utilize such water or steam.

26 I claim as my invention or discovery:—

1. The process of removing incrustations of calcium sulphate from heating surfaces, consisting in condensing steam in contact with said surfaces by carrying off the heat from the opposite side of the heat-conducting walls, substantially as described.

2. The process of removing incrustations of calcium sulphate from heating surfaces, consisting in condensing steam in contact with said surfaces by transferring its heat to brine of lower temperature on the opposite side of the heat-conducting walls and so carrying off the heat, the steam and brine being applied alternately to each side of said heat-conducting walls so that the heating of the brine and the removal of the incrustation from a previous heating proceed together, substantially as described.

3. The process of removing incrustations of calcium sulphate from heating surfaces, consisting in condensing steam in contact with said surfaces by transferring its heat to saturated boiling brine of lower temperature on the opposite side of the heat-conducting walls and so carrying off the heat, the steam and brine being applied alternately to each side of said heat-conducting walls so that the evaporation of the brine with precipitation of salt and the removal of the incrustation from a previous heating proceed together, substantially as described.

4. An apparatus divided into chambers by heat-conducting walls and provided as to one chamber with a steam-supply pipe,
27 a brine-supply conduit, and means for withdrawing the products of the steam-condensing and brine-heating operations, and as to other chamber with a steam-supply pipe, means for supplying a cooling medium, and means for withdrawing the products of the steam-condensing and the cooling-medium heating operations, substantially as described.

5. An apparatus divided into chambers by heat-conducting walls and having each chamber provided with a steam-supply pipe, a brine-supply conduit, and means for withdrawing the products of the steam-condensing and brine-heating operations, substantially as described.

6. An apparatus divided into chambers by heat-conducting walls and having each chamber provided with a steam-supply pipe, a brine-supply conduit, and means for withdrawing water from the steam-condensing operations and water vapor and salt from the brine-heating operations, substantially as described.

28 & 29 In testimony whereof I affix my signature, in presence of two witnesses.

HERMAN FRASCH.

F. W. LOTHMAN.
J. C. UPDEGROVE.

* * * * * * *

30 C. C. K.

WASHINGTON, D. C., *December* 16, 1899.
Mailed " " "

No. 736,843. Filed November 13, 1899. "Means for removing incrustation of calcium sulphate from brine-heating surfaces."

Herman Frasch, care Chas. J. Hedrick, 606 F St. N. W., Washington, D. C.:

Upon perusal of the specification and claims in this case it is seen that two different subjects of invention are presented—process and apparatus. Under rule 41 their joinder in one application is improper, and division is therefore required at the outset (*Ex parte* Rappleye, 85 O. G., 2096).

Claims 1, 2, and 3 are drawn to process; claims 4, 5, and 6 to apparatus. Division on this line must be made before action upon the merits can be given. It is noted that the specification appears unnecessarily prolix. The comparatively simple invention could apparently be presented in less than ten pages.

LITTLEWOOD, *Examiner.*

McE.

31 Room 258.

Herman Frasch. Means for removing incrustation, etc. Filed November 13, 1899. No. 736,843.

WASHINGTON, D. C., *December* 13, 1900.

Hon. Commissioner of Patents.

SIR: When the poet Horace labored to be brief he became obscure.

Applicant desires to be as brief as possible without introducing obscurity. The examiner gives no particulars of improvement in this regard, and it is understood that the suggestion of prolixity is not made a reason for refusing the application.

The sole reason given for this is understood to be the mere presence in the application of *claims* to process and apparatus respectively, the *description* of both being proper and, indeed, necessary.

It is submitted that the Commissioner has no jurisdiction to refuse this application, or, in fact, any application, for any such reason. The reasons for refusing an application are set forth in the statute, and the Commissioner has no jurisdiction to increase or diminish therefrom under the guide of an office rule or in any other way.

The attempt to enforce the presentation in separate applications of claims which the statute authorizes to be made in one is an interference with applicant's legal rights. Not only would it involve applicant in illegal fees and expenses, but it also denies him the protection contemplated by law; for—

"In *Underwood v. Gerber* (C. D. 1893, 340; 63 O. G., 1063; 149 U. S., 224) it was held that where a patentee obtained two patents

on the same day, upon applications filed on the same day, they could not be treated as one patent with two claims." * * *
(Quoted from Miller *vs.* Eagle, C. D. 1894, p. 156.)

32 So long, then, as the fees and other expenses required for two patents and the protection afforded by them are not the same as in the case of one patent with two claims, it is clear that something more than the mere conduct of proceedings is involved in the office rule, and this becomes an infringement on the legal rights of applicant. Most obviously is this so where the matter to be claimed in the subsequent patent is required by statute to be described in the earlier, for "the patentee could not include in a subsequent patent any invention embraced or described in a prior one granted to himself" * * * (James *v.* Campbell, C. D. 1882, p. 85).

The intention of the law is that an applicant shall point out and claim everything described in his specification which, being new and useful, he desires to protect.

That this is the intention of the law is evident from the following considerations:

1. No limitation as to the number or kinds of claim is set forth in the statute.

2. An underlying principle of the patent law is that the protection given to the inventor ought to be coterminous with the new disclosure which he makes to the public, the one being the consideration for the other (Grant *v.* Raymond, 1 Whitman's Patent Cases; 6 Peters, 218).

3. The Supreme Court U. S. have found in a failure to claim matter which is described a presumption of lack of novelty in such matter (Brown *v.* Guild, 6 O. G., 401, column 2; Miller *v.* Bridgeport Brass Co., C. D. 1882, p. 51; Mahn *v.* Harwood, C. D. 1885, p. 149) or a dedication of the same to the public.

4. Under the ruling of the Supreme Court U. S. in James *v.* Campbell, above, if a patentee should not claim all the in-

33 vention disclosed in his patent he cannot get a valid *subsequent* patent for what has been so described without claim.

It is true that an applicant may describe, and, indeed, often must describe, what is public property or is the subject of a prior patent to himself or another, and that such matter cannot lawfully be claimed; but this is simply because said matter is no longer new and the subject of appropriation. It is not because the law intends an inventor in a given specification to point out and claim less than the whole of that which being lawfully described he believes to be his own invention or discovery and in consequence desires to protect by patent.

Moreover, as pointed out in James *v.* Campbell, Mahn *v.* Harwood, and Miller *v.* Eagle, all above, an applicant *in some cases* may reserve a matter described, but not claimed, in a given specification, and may have pending a simultaneous application therefor; but the necessity for an express reservation or a simultaneous application, or both, evidences the expectation of the statute to find in each specifi-

cation a claim to everything therein described for which the inventor desires protection by the patent to be issued on that specification. Any other condition is exceptional, and is so recognized by the decisions.

Moreover, the liberty of reserving to another patent matter described in a given specification and not therein claimed is a limited one (Miller *v.* Eagle, C. D. 1894, p. 157), and what appears in James *v.* Campbell and Mahn *v.* Harwood (both above) ought to be taken subject to the limitation in the former decision, to wit, that "a patentee could not include in a subsequent patent any invention embraced or described in a prior one granted to himself."

34 The decisions in Suffolk Co. *v.* Hayden, 3 Wall., 315, and Washburn and Moen *v.* Beat 'Em All Barbed Fence Co., C. D. 1892, 299, are not contrary to this pronouncement in James *v.* Campbell, because in those decisions the later issued patents was considered "in legal effect * * * a prior patent" (C. D. 1892, p. 304), and did not describe the matter claimed in the earlier issued but in legal effect subsequent patent. So also the circuit court & C. C. A. cases of Thomson and Houston *vs.* Elmira and Horseheads R'y Co., C. D. 1896, p. 122, and same *v.* Ohio Brass Co., C. D. 1897, p. 579.

Still further, even the limited liberty which exists for reserving matter described but not claimed in a patent is a *privilege* belonging to the *inventor*, and not to the Commissioner of Patents. If an inventor attempts to exceed the legal limits of his privilege the Commissioner may resist the attempt, but he has no jurisdiction to compel an inventor to reserve a part of his described invention to a subsequent patent, nor to file a simultaneous or any other application, nor to dedicate a part of his invention to the public, nor to put the inventor in the dilemma of either dedicating a part of his invention to the public or else filing a simultaneous application therefor.

If, however, *neither* of two inventions can be described in the manner required by the statute without describing or substantially suggesting both of said inventions, the law denies to the inventor *all* liberty of obtaining separate patents for said inventions respectively, unless essential modification or qualification can be made in the pronouncement of the Supreme Court in Miller *v.* Eagle, that "where a patentee obtained two patents on the same day, upon applications filed on the same day, they could not be treated as one patent with two claims" (C. D. 1894, p. 156), or in that in

35 James *v.* Campbell, to wit, that "the patentee could not include in a subsequent patent any invention * * * described in a prior one granted to himself" (C. D. 1882, p. 85); for the Miller *v.* Eagle pronouncement would require the two patents to be regarded as prior and subsequent respectively, and since they each contain, and must, under the statute, contain, the same essential description, the one regarded as subsequent would be invalid under James *v.* Campbell, as being for an invention described in a prior patent to the same inventor.

Certainly the Commissioner has no jurisdiction to compel an in-

ventor to dedicate to the public a part of his invention unless he shall be able to secure an essential modification or qualication of the law as pronounced by the Supreme Court U. S.

This is precisely what will happen if separate patents are to be granted in many cases of process and apparatus.

The inventor of a process carried out by apparatus "must describe * * * some apparatus by which the process can be applied" (Tilghman *v.* Proctor, C. D. 1881, p. 177), and the inventor of an apparatus to be used in carrying out a process must describe "the process of * * * using it" (sec. 4888, R. S.).

Consequently in many cases of process and apparatus both must be described as the foundation for any claim at all, and it is not possible to have two patents without including in the subsequent of said two patents an invention described in the prior one granted to the same inventor.

In this connection it should be observed that the invention claimed in the subsequent patent in suit in James *v.* Campbell was a process, and was "embraced or described" in the prior patent only because the implement claimed in this prior patent was used to carry out said process.

36 The Supreme Court U. S. have expressly affirmed an applicant's legal right to one patent with distinct claims therein to process and apparatus respectively, for they said in Merrill *vs.* Yeomans: "If all which is described as new in these specifications is really so, the inventor has a right to a patent for three inventions:

1. For * * * distilling apparatus.
2. For a new process or mode of distilling * * *.
3. For the product of this new process of distillation * * *." (C. D. 1877, page 281.)

And in the telephone cases, "The law has given the discoverer and inventor the right to a patent—as discoverer for the useful art, process, or method of doing a thing he has found, and as inventor for the means he has devised to make his discovery one of actual value." (C. D. 1888, p. 325.)

It is plain that the court meant one patent with distinct claims, because:

1. They say a patent, not patents, nor in general patent protection.
2. In each case the patent in suit was one patent, with distinct claims to process and apparatus respectively.
3. Two patents are not the same thing in legal effect as one patent with two claims; and while this difference was most clearly announced in the latter cases of Underwood *v.* Gerber and Miller *vs.* Eagle (both above), it must legally be presumed to have been in the mind of the court.
4. In the Telephone cases it was expressly recognized that a description of the "means * * * is necessary to show that the art can be used" (C. D. 1888, p. 324), and it cannot be supposed that a subsequent patent for what was thus necessarily described in a prior patent was contemplated, in view of their own pronouncement

in James *v.* Campbell, above, that such subsequent patent must be invalid.

37 In conclusion, then, it is submitted:

1. That an application has the legal right to *claim* in a patent whatever new and useful invention of his own he has the legal right to *describe* in the same patent.

2. That at the least, as Commissioner Paine said in *Ex parte* McClintock, in reference to general and more limited inventions, an inventor in the same patent "may claim what he must describe" (C. D., 1880, p. 50).

3. That where he must describe two things as a statutory condition for claiming either, he not only may claim both, but his only safe course, in view of Miller *v.* Eagle and James *v.* Campbell (both above), is to claim both in the same patent, this being the only possible way to secure valid claims to both unless the pronouncements in these decisions shall be essentially modified or qualified.

4. That the Supreme Court U. S. in Merrill *v.* Yeomans and the Telephone cases (both above) have expressly affirmed an inventor's legal right to claim both process and apparatus in the same patent, so that applicant's right in this regard should be beyond controversy.

5. That no allegation has been made that the statutory description of applicant's process could be made without including his apparatus in the description, and conversely; and that no reason has been or can be given for refusing the present application which would not equally apply to any and every application containing claims to both process and apparatus, no matter how closely related said process and apparatus might be.

38 The Commissioner, then, being without jurisdiction to refuse this application or any application, for the reason given in refusal thereof, it is trusted that no further objection will be made to this application, at least because of such reason.

An allowance is requested.

Respectfully,

HERMAN FRASH,
By CHAS. J. HEDRICK,
His Attorney.

39 C. C. K.

DECEMBER 31, 1900.
Mailed " " "

No. 736,843. Filed November 13, 1899. "Means for removing incrustation of calcium sulphate from brine-heating surfaces."

Herman Frasch, care Chas. J. Hedrick, 606 F St. N. W., Washington, D. C.:

The argument filed in this case is simply a denial of the jurisdiction of the Commissioner to make a rule such as rule 41, and terms the requirement here made "an interference with applicant's legal rights."

The rule has been made and approved by the honorable Secre-

tary, and in *Ex parte* Boucher, 88 O. G., 545, applicant will find the reasons which led to the revision of rule 41. That decision forms full answer to the points raised by the argument, and it is suggested that it has been decided that the rules of this office "are just as author-ative as the laws of Congress." United States *ex rel.* Koechlin & Witt *vs.* Commissioner.

The suggestion of prolixity was not given as a reason for
40 refusal of a patent. In fact, no "refusal" appears of record, and in assuming that a patent has been refused the attorney misstates the position of the office.

It is noted that applicant's structure is not found, but that his claims as drawn are broad enough to include many old evaporating structures. See, for instance, Van Ruymbeke, December 3, 1895 (sugar and salt, vacuum pans).

The requirement for division is repeated and insisted on.

LITTLEWOOD, *Examiner.*

[Endorsed:] Serial No., 736,843; paper No. 3.

41 Room 258.

Herman Frasch. Removing incrustation, &c. Filed November 13, 1899. No. 736,843.

606 F St. N. W.,
Washington, D. C., *October* 5, 1901.

Hon. Commissioner of Patents.

Sir: The following is in answer to the official letter of December 31 last:

In the Koechlin and Witt case, C. D. 1882, page 442, 22 O. G., 1365, the court said that those Patent Office rules being "reasonable," which are "enacted for its conduct * * * if they are within the powers of the office, are just as authoritative as the laws of Congress itself, if within the limitations of its powers."

Applicant contends that any rule which denies the grant in any and all cases of one patent with both process and apparatus claims is unreasonable, and that it is outside the Commissioner's powers because it attempts to control the substance of applications and not merely the conduct of proceedings in the Patent Office, and also because its provisions would be inconsistent with the law.

On November 13, 1899, applicant filed his present application in all respects in compliance with sections 4888, 4889, 4892, and 4934, R. S.

Soon after an official letter of that date was received, saying that the "papers are duly filed" and that the "case will be taken up for examination in about six weeks."

42 Next followed the official letter of December 16, 1899. I supposed that it was the result of the examination required by section 4893, R. S., and that it was intended to give applicant the information which section 4903, R. S., requires to be given "whenever, on examination, any claim for a patent is rejected."

If any misconception is involved in these suppositions, will the examiner himself please state the position of the office.

The reference cited (patent 550,699 to Van Ruymbeke, 1895) speaks (lines 79–87 of page 1) of certain pipes, u', u^2, u^3, and w', w^2, w^3, "which may be opened when it is desired to flush or clean the apparatus with steam or water," and of certain other pipes, s', s^2, s^3, "for admitting steam or water for this purpose, said pipes leading into the various pans beneath the heating drum thereof."

There is no suggestion, however, by Van Ruymbeke that when steam is admitted its condensation is to be so effected within the pans as that the incrustating material should be dissolved in the resulting water of condensation, nor is there any suggestion of utilizing the steam admitted by pipes s', s^2, s^3, to heat or to evaporate brine.

There is no suggestion by Van Ruymbeke of any admission of brine or other cooling medium to any heating drum V. If the objection founded upon the reference given is to be insisted on, the examiner is requested to point out the particular places in the patent cited which may be held, respectively, to meet the several terms of applicant's claims.

A reconsideration is requested.

Respectfully,

HERMAN FRASCH,
By CHAS. J. HEDRICK,
His Attorney.

43 & 44 OCT. 21, 1901.
Mailed " " "

No. 736,843, filed Nov. 13, 1899, for means for removing incrustation of calcium sulphate from brine-heating surfaces.

Herman Frasch, c/o Chas. J. Hedrick, 606 F St. N. W., city:

The argument filed Oct. 5 has been entered. It is not within the power of the examiner to waive the requirements of the rules as sufficiently set forth in previous office letter.

The requirement of division made in office letter of Dec. 16, 1899, and repeated in that of Dec. 31, 1900, is again repeated.

This action is final on this point.

LITTLEWOOD, *Examiner.*

McE.

* * * * * * *

45 DEC. 16, 1901.
Mailed " " "

736,843. Filed Nov. 13, 1899. Means for removing incrustations of calcium sulphate from brine-heating surfaces.

Herman Frasch, care of Chas. J. Hedrick, 606 F St., Washington, D. C.:

The applicant's action of Dec. 13, 1901, is noted.

An appeal in this case is premature, for the reason that there has been no such final rejection as is required by rule 133, nor, indeed,

has there been any rejection. Applicant's case stands under requirement for division under rule 41.

It is noted that neither the examiner nor the board of examiners-in-chief has jurisdiction over the validity of rules, over the Commissioner's power to make rules, or over the power of Congress to make laws to control the Commissioner. Attention is invited to *Ex parte* Frasch, 91 O. G., 459.

The requirement for division was made final in office action of Oct. 21, 1901.

LITTLEWOOD, *Examiner.*

46 Room 258.

Herman Frasch. Removing incrustation, etc. Filed November 13, 1899. No. 736,843.

WASHINGTON, D. C., *December* 18, 1901.

Hon. Commissioner of Patents.

SIR: The following is in answer to the official letter of 16th instant:

To decide whether a given invention is subject-matter for one patent or for two is within the jurisdiction of the examiners-in-chief, according to the rulings in *Ex parte* McDonald, C. D. 1893, p. 99, and in *Ex parte* Hulbert, C. D. 1894, page 1; *Ex parte* Burgess, C. D. 1897, page 64, which rulings are understood not to have been altered.

In Commissioner of Patents *v.* Whitely, 4 Wall., 522, the Supreme Court U. S. decided that a question not involving the novelty, useful-, or originality of the invention was appealable under the statutes then in force.

The matters of merits which are appealable to the board of examiners-in-chief are those affecting the merits of the *patent* to be granted on the *application*, and not merely the merits of the *invention.*

In Neill *v.* Commissioner of Patents, C. D. 1898, page 332, the Court of Appeals D. C. indicated the even rulings of practice would be considered by that court when "some substantial right of a party has been denied." This is also indicated in the later case of Marshutz *v.* Commissioner of Patents, C. D. 1898, page 578.

As understood, the examiner's decision, if sustained, cuts off applicant from obtaining not only such a patent as he asks, but such patent protection as he contends is his legal right. The re-
47 fusal to call the action a rejection does not make it more nor less a final denial of the right claimed. Moreover, it disposes of the application unless and until it shall be amended in matter of substance.

It is conceived that error exists in calling the decision a requirement for division. No division, properly speaking, has or could be required, nor, in fact, is any division contemplated by that portion of rule 41 which is understood to be relied upon.

No division between process and apparatus in certain cases is possible for the reason stated by the Supreme Court U. S. in Leroy *v.* Tatham, 22 How., 132 (underscoring mine):

"And in regard to a practical application of the new conception, it is as necessary as the conception itself, and *they must unite in the patent.*"

I have carefully read the opinion in *Ex parte* Hans A. Frasch, 91 O. G., 459. Said Frasch, it is hardly necessary to say, is not the present applicant. The latter was in no manner a party to the said case.

The said opinion quotes as if from Powder Co. *v.* Powder Works, (98 U. S., 126; 15 O. G., 289) the remark (made in fact in James *v.* Campbell, below) that "a process and a machine are not necessarily one and the same invention. They are generally distinct and different."

This remark implies that a process and a machine may *sometimes* be one and the same invention; and, irrespective of this, it contains no suggestion that after a patent on a process carried into effect with the aid of a machine a later patent on the very identical machine would be valid.

The said opinion quotes the remark in James *v.* Campbell (104 U. S., 356; 21 O. G., 337) that "a patent for a process and a patent for an implement or a machine are very different things."

48 Undoubtedly they are; and they, separately and conjointly, are "different things" from the patent to which "the law has given * * * the right" to applicant—that is to say, a patent for both—"as discoverer for the useful art, process, or method of doing a thing he has found, and as inventor for the means he has devised to make his discovery one of actual value." (See opinion of the Supreme Court U. S. in the Telephone cases, C. D. 1889, p. 325.)

But it does not follow that because a patent for a process would be a different thing from a patent for a machine, that therefore one will not defeat the other when granted to the same inventor.

In James *v.* Campbell, itself a later process patent, — was held void in view of a prior implement patent to the same inventor, the court saying:

"It is hardly necessary to remark that the patentee could not include in a subsequent patent any invention embraced or described in a prior patent granted to himself any more than he could an invention embraced or described in a prior patent granted to a third person."

The Commissioner (Mr. Duell) in the Hans A. Frasch case quotes from former Commissioner Mitchell to the effect that it had been decided over and over again by the Supreme Court of the United States that process and apparatus constitute distinct inventions; but the best evidence of what that court decided *in* the decisions themselves.

No case in the Supreme Court U. S. has been cited in which a later patent has been sustained for the identical apparatus disclosed in a prior process patent to the same inventor, or conversely.

In Tilghman *v.* Proctor, C. D. 1881, page 163, the Supreme Court U. S. are careful to limit the right to a later patent to an *improved* apparatus. They say, referring to Neilson's invention of the hot blast:

"Another person might invent a better apparatus for applying the process than that pointed out by Neilson, and might
49 obtain a patent for such improved apparatus, but he could not use the process without a license from Neilson. His improved apparatus would in this respect stand in a relation to the process analogous to that which an improvement on a patented machine bears to the machine itself." (C. D. 1881, page 175.)

They do not suggest that a later patent to another or to Neilson himself could issue for the very identical apparatus described in Neilson's patent.

The Commissioner (Mr. Duell) quotes from Thomson-Houston Co. *v.* Elmira Co. (71 Fed. Rep., 396) the remark that—

"The invention of a new art, machine, or manufacture, and the invention of an improvement upon either, are substantially distinct and separate; and because this is so, the order of priority between patents to the same inventor for the different inventions, in the absence of abandonment or disclaimer, is immaterial."

Undoubtedly the same person may have one patent for a primary invention and another for an improvement thereon; and it is also true that the patent on the primary invention may issue first or it may in some cases issue second; but if it issue second, then it is supported on the ground that it is *prior in legal effect*, notwithstanding its later issue. As the Supreme Court U. S. said in the Barbed Fence case (Washburn & Moen *v.* Beat 'Em All Barbed Wire Co., C. D. 1892, page 299):

"In legal effect this was a prior patent, since the date of the application and not the date of the patent controls in determining the legal effect to be given two patents issued at different dates to the same inventor and the order in which they are to be considered." (C. D. 1892, near top of page 304).

When the later issued patent for the broad invention cannot be considered the prior in legal effect, it seems to be invalid as in James *v.* Campbell, above, and in Miller *v.* Eagle, C. D. 1894, page 147.

50 The later patent in James *v.* Campbell was a reissue for—

1st. A process.

2d. The implement broadly.

3d. The implement narrowly.

The prior patent was for another form of what would be the same implement considered broadly. The earlier patent (if later in legal effect) could apparently have been considered an improvement on the primary implement or general combination of the later issued patent (the original of the reissue in suit), but such later issued patent was applied for after the issue of the narrow patent, and probably for this reason the narrow, not the broadened, patent was regarded as the earlier "in legal effect," as well as in date of issue.

In Miller *v.* Eagle the later issued patent was the broad patent, and was granted on the earlier (original) application, but the Supreme Court U. S. refused to consider it prior in legal effect because apparently "the power to create a monopoly is exhausted by the first patent." (C. D. 1894, page 156.)

In this case (Miller *v.* Eagle) the Supreme Court U. S. plainly intimate that of two patents, one for a machine and another for a product, the earlier issued might defeat the later issued patent, for they say:

"A single invention may include both the machine and the manufacture it creates, and, in such cases, if the inventions are really separable, the inventor may be entitled to a monopoly of each." (C. D. 1892, page 157.)

The use of the word *if* plainly gives warning that a "machine and the manufacture it creates" are not *necessarily separable*, as rule 41 makes them to be.

In the Hans A. Frasch case the Commissioner says:

51 "This question whether claims for a process and claims for an apparatus should be permitted in the same application is one of office policy."

But from this pronouncement the applicant must with all deference dissent. He submits that the question is one covered by the Constitution and laws passed in pursuance thereof, not one within executive discretion.

In Miller *v.* Eagle the Supreme Court U. S. said:

"It is insisted on the part of the appellee that whether the invention shall be protected in part of its *features* by one patent, and as to the rest by another, or shall be completely protected by a single patent, is a matter which concerns solely the Patent Office and the inventor.

Under the rule announced in the foregoing authorities this proposition cannot be sustained."

With respect to the disclaimer of jurisdiction, attention is called to the fact that a refusal to answer and forward the appeal amounts to a denial not of the examiner's jurisdiction, but only of the jurisdiction of the examiners-in-chief.

It is requested that the appeal to the examiners-in-chief may be answered and forwarded to them for their decision.

Respectfully,

HERMAN FRASCH,
By CHAS. J. HEDRICK,
His Attorney.

52 & 53 C. C. K.

DECEMBER 19, 1901.
Mailed " " "

No. 736,843. Filed November 13, 1899. Means for removing incrustation of calcium sulphate from brine-heating surfaces.

Herman Frasch, care Chas. J. Hedrick, 606 F St. N. W., Washington, D. C.:

The letter filed December 18, 1901, has been considered.

The examiner has no power to send forward for consideration by the examiners-in-chief a case which has not received *rejection* upon one or more of the grounds provided in rules 133 and 134. The refusal to send forward is repeated and made final. From this action petition may be taken (rule 145).

The case stands, under requirement of division, between process and apparatus (rule 41), made December 16, 1899; repeated December 31, 1900, and made final October 21, 1901. This final action is also matter for petition.

LITTLEWOOD, *Examiner.*

McE.

* * * * * * *

54 Room 258.

Herman Frasch. Means for removing incrustation of calcium sulphate from brine-heating surfaces. Filed November 13, 1899. No. 736,843.

WASHINGTON, D. C., *December* 19, 1901.

Hon. Commissioner of Patents.

SIR: Your petitioner represents as follows:

First. On November 13, 1899, your petitioner filed his above-entitled application for patent in all respects in due form of law and paid the fee required.

Second. Your petitioner was informed by office letter of said date that his papers were duly filed, and that his said application would be taken up for examination in its order, which it was indicated would be in about six weeks.

Third. By office letter of December 16, 1899, he was informed (*a*) that under rule 41 the joinder of process and apparatus in one application was improper, claims 1, 2, and 3 being drawn to process, and claims 4, 5, and 6 to apparatus; (*b*) that division on this line must be made before action on the merits could be given, and (*c*) that your petitioner's comparatively simple invention could apparently be presented in less than ten pages.

Fourth. On December 13, 1900, your petitioner answered, pointing out (*a*) that he desired to be as brief as possible without introducing obscurity, and that no particulars of improvement in this regard had been given; (*b*) that the sole reason for refusing
55 the application was understood to be the mere presence in the application of *claims* to process and apparatus respectively,

the *description* of both being proper and, indeed, necessary, and (*c*) that the Commissioner of Patents had no jurisdiction to refuse this application or any application for any such reason. By the same communication your petitioner (*d*) persisted in his claim for a patent without altering his specifications (sec. 4903, R. S.), and asked an allowance.

Fifth. By office letter of December 31, 1900, your petitioner was informed (*a*) that the rule was made with the approval of the Secretary of the Interior, is based on reasons stated in *Ex parte* Boucher, 88 O. G., 545, and is "as authoritative as the laws of Congress," citing U. S. *ex rel.* Koechlin & Witt *v.* Commissioner, C. D. 1882, page 442; (*b*) that no "refusal" of a patent "appears of record;" (*c*) that applicant's structure was not found, but that the claims as drawn were broad enough to include many old evaporating structures, one of them being cited by reference to a patent mentioned, and (*d*) that division was insisted on.

Sixth. On October 5, 1901, your petitioner responded, showing (*a*) that by the very decision cited (the Koechlin & Witt case) a rule to be authoritative must be (1) reasonable, (2) for the conduct of proceedings, and (3) within the power of the office, none of which conditions was satisfied by rule 41; (*b*) that applicant supposed the official letter of December 16, 1899, was the result of the examination required by sec. 4893, R. S., and was intended to give applicant the information which sec. 4903, R. S., requires to be given "whenever, on examination, any claim for a patent is rejected," and (*c*) that certain limitations of your petitioner's "specifications" were not found in the patent referred to. In the same communi-
56 cation *he* (*d*) asked for further explanation in case the reference should be insisted on. He further (*e*) persisted in his claim for a patent "without altering his specifications" (sec. 4903, R. S.) and asked a reconsideration.

Seventh. By office letter of October 21, 1901, your petitioner was informed (*a*) that it was not in the power of the examiner to waive the requirements of the rules; (*b*) that the requirement of division made December 16, 1899, and repeated December 31, 1900, was again repeated, and (*c*) that the action was final on this point.

Eighth. On December 13, 1901, your petitioner appealed in due form from the decision of the primary examiner to the board of examiners-in-chief and paid the fee therefor as provided by secs. 4909 and 4934, R. S.

Ninth. By office letter of December 16, 1901, your petitioner was informed (*a*) that an appeal was premature, because there had been no "rejection;" (*b*) that the application stood under requirement of division under rule 41, and (*c*) that neither the examiner nor the board of examiners-in-chief had jurisdiction over the validity of rules nor over the powers of the Commissioner or of Congress. Your petitioner's attention was also invited (*d*) to the decision in *Ex parte* Hans A. Frasch, 91 O. G., 459.

Tenth. On December 18, 1901, your petitioner responded, showing (*a*) that the decision appealed from operated finally to deprive

your petitioner of the patent, and also of the protection to which the law gives him the right; (*b*) that no division, properly speaking, had been required by the examiner or was contemplated by that portion of rule 41 which the examiner relied upon or
57 was, indeed, possible, since the new conception and the means to make it practically useful *must unite in the patent;* (*c*) that the question of whether a given specification set forth subject-matter for one only or for two patents, which was one of the points of the appeal, was within the board's jurisdiction by repeated rulings of different Commissioners, which rulings had not been altered, and (*d*) that the refusal to forward the appeal was a denial, not of the examiner's, but of the board's, jurisdiction. Your petitioner (*e*) reviewed the decision in the Hans A. Frasch case and (*f*) requested that the appeal to the examiners-in-chief might be answered and forwarded.

Eleventh. By office letter of December 19, 1901, your petitioner was informed (*a*) that the examiner had no power to forward an appeal unless the case had been *rejected* upon grounds of rules 133 and 134; (*b*) that the refusal to forward the appeal was repeated and made final, and (*c*) that a petition might be taken from this action as also (*d*) from the requirement of division.

Wherefore your petitioner prays as follows:

First. That you will make such order or action as that your petitioner's appeal to the examiners-in-chief may be heard by them.

Second. In the event of a refusal of your petitioner's first prayer, that you will yourself consider the various matters, all and several, raised by said appeal, which is hereby made a part of this petition the same as if here entered in full.

Third. That in any event you will make such order or action as that your petitioner's legal rights may be protected.

Fourth. That you will advise the examiner that his objec-
58 & 59 tion be not insisted upon, whether properly or improperly made by him heretofore, and will direct him to proceed with the application.

Fifth. That you will administer such other or further relief as may be proper in the premises.

A hearing of this petition and appeal is requested at your earliest convenience.

Respectfully,

HERMAN FRASCH,
By CHAS. J. HEDRICK,
His Attorney.

* * * * * * *

60 United States Patent Office.

In re application of Herman Frasch. Filed November 13, 1899. Serial No., 736,843. Means for removing incrustation of calcium sulphate from brine-heating surfaces.

U. S. PATENT OFFICE, *Dec.* 28, 1901.
Mailed —— —, ——

Before the Commissioner of Patents on Petition.

Examiner's Statement.

To the honorable Commissioner of Patents.

SIR: This petition is taken against the repeated requirements for division between claims for process and claims for apparatus. Applicant was told "that two different subjects of invention are presented—process and apparatus. Under rule 41 their joinder in one application is improper, and division is therefore required at the outset (*Ex parte* Rappleye, 85 O. G., 2096)."

Ex parte Rappleye was then in force, and is to the effect that "when the independence of the inventions is clear, division should be made before any action upon the merits."

In the same letter he was further told that "claims 1, 2, and 3 are drawn to process; claims 4, 5, and 6 to apparatus. Division on this line must be made before action on the merits can be given * * *"

Applicant filed an argument against the requirement made, and demanded allowance of the claims as they stood.

He was then told that the arguments which he had filed was simply a denial of the jurisdiction of the Commissioner to
61 make a rule such as rule 41. He terms the requirement made by the examiner "an interference with applicant's legal rights." He was informed that the rule had been made and approved by the honorable Secretary, and that in *Ex parte* Boucher, 86 O. G., 545, applicant would find the reasons which led to the revision of rule 41. The decision forms full answer to the points raised by the argument, and it was suggested that it had been decided that the rules of the office "are just as authoritative as the laws of Congress" (U. S. *ex rel.* Koechlin & Witt *vs.* Commissioner, 22 O. G., 1365); that no "refusal" appears of record, and in assuming that a patent had been refused the attorney misstated the position of the office. In this letter, which was a year later than the first, he was told that his exact structure is not found, but that his claims were drawn broad enough to include many old evaporating structures, and his attention called to the Van Ruymbeke patent. The requirement for division was repeated and insisted upon.

The gist of the next argument, which followed several months later, is to the effect that—

"Applicant contends that any rule which denies the grant in any and all cases of one patent with both process and apparatus claims is unreasonable, and that it is outside the Commissioner's powers be-

cause it attempts to control the substance of applications and not merely the conduct of proceedings in the Patent Office, and also because its provisions would be inconsistent with the law."

He was told that it was not within the power of the examiner to waive the requirements of the rules as asked by him, and division was insisted on.

This was followed by an appeal to the board of examiners-in-chief, which the examiner refused to send forward, and he was informed that an appeal in this case was premature, for the reason that there had been no such final rejection as is required by rule 133; nor, indeed, had there been any "rejection;" that the case stood under the requirement for division. That—

"It is noted that neither the examiner nor the board of ex-
62 aminers-in-chief has jurisdiction over the validity of rules; over the Commissioner's power to make rules, or over the power of Congress to make laws to control the Commissioner."

His attention was called to *Ex parte* Frasch, 91 O. G., 459, which decided the points here raised against the applicant.

His prayer should be refused and the petition denied.

Respectfully submitted.

J. B. LITTLEWOOD,
Examiner, Division VI.

Washington, D. C., December 28, 1901.

63 Jan. 15, 1902. M. H.

United States Patent Office.

Ex parte Herman Frasch. Means for removing incrustation of calcium sulphate from brine-heating surfaces.

Petition.

Application filed November 13, 1899, No. 736,843.

Mr. Charles J. Hedrick for petitioner.

This is a petition from the action of the primary examiner requiring division in the above-entitled case and refusing to forward to the examiners-in-chief an appeal which has been filed.

The application includes claims to a process and claims to an apparatus, and therefore the examiner properly required division and refused to act upon the merits of the claims until that requirement was complied with. The petitioner regarded this as a refusal of a patent to him and filed a request for reconsideration, which he calls a persistence in his claim, under section 4903 of the Revised Statutes, and upon a repetition of the requirement for division filed an appeal to the examiners-in-chief.

A requirement for division is not an action upon the merits of the application, but is a mere matter of form, and therefore a party has no right of appeal to the examiners-in-chief from such a requirement. It is not a refusal of a patent or patents upon the
64–67 alleged invention or inventions, but is a ruling that the application therefor has not been made in proper form. The

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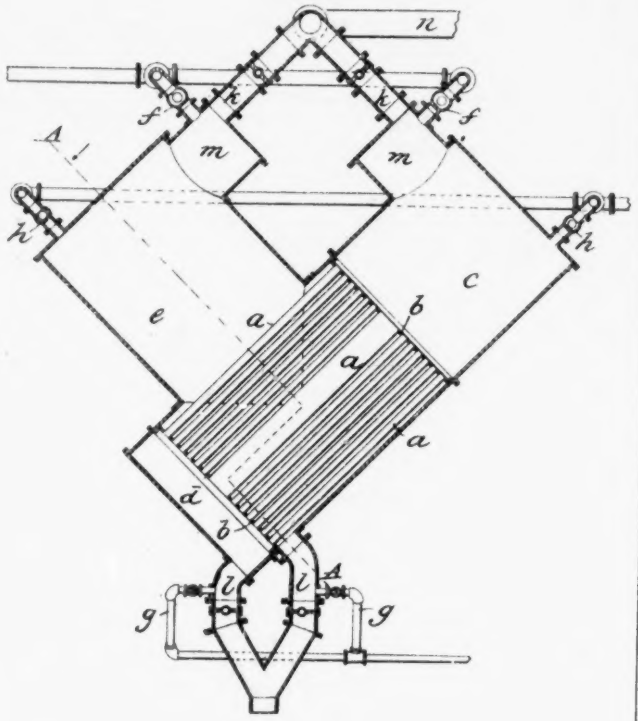
of
Herman Franck
} page 69

Fig. 1.



Witnesses:
F. H. Schott
R. E. Muzzy.

Inventor
Herman Franck
by Chas. J. Hedrick
his Attorney

Patent-appeal Docket No. 201
In re application
of
Herman Frasch
Page 69

Fig. 2.

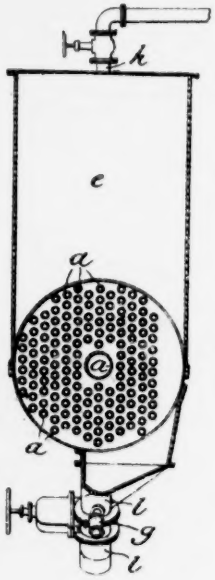
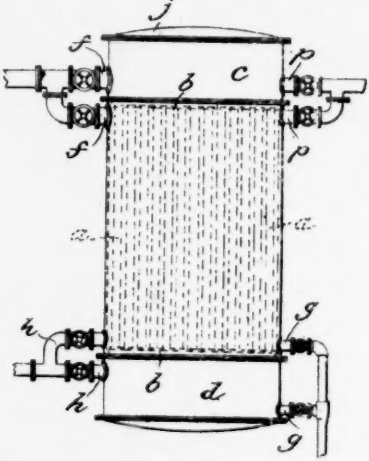


Fig. 3.



Witnesses
H. H. Schott
R. E. Mayzz.

Inventor
Herman Frasch
by Chas. J. Hedrick
his Attorney

requirement of division may be and often is made where all of the claims are admitted to be patentable. The objection is to the way in which the matter is presented and not to the matter itself. The examiner was right in refusing to forward the appeal.

The petition is denied.

F. I. ALLEN,
Commissioner.

January 23, 1902.

* * * * * * *

(Here follows drawings marked pp. 68 and 69.)

70 Amount received, $10. Chief clerk. F.

Room 258.

Herman Frasch. Means for removing incrustation of calcium sulphate from brine-heating surfaces. Filed November 13, 1899. No. 736,843.

WASHINGTON, D. C., *December* 13, 1901.

Hon. Commissioner of Patents.

SIR: Appeal is hereby taken to the board of examiners-in-chief from the decision of the primary examiner twice rejecting the claims of the above entitled application for patent.

The points of the decision upon which appeal is taken are as follows:

First. The validity of the authority exercised by the Commissioner of Patents, with the approval of the Secretary of the Interior, under the guise of establishing regulations for the conduct of proceedings in the Patent Office, of adding to or substracting from or in any way modifying the provisions of section 4888 of the Revised Statutes with respect to the substance of the written description, or, in other words, of the specification and claim, required by that section.

The primary examiner is understood in effect to affirm the validity of this authority, since otherwise there would be no ground for the decision appealed from.

Second. The validity of the authority exercised by the Commissioner of Patents in establishing, with the approval of the
70½ Secretary of the Interior, rule 41 of the rules of practice of the United States Patent Office, and in particular in establishing that portion of said rule 41 established February 1, 1900, which reads:

"Claims for a machine and the process in the performance of which the machine is used must be presented in separate applications."

The examiner's decision is understood expressly to be based upon the validity of this authority.

Third. The validity of two patents bearing to each other the following relationships severally, or any two or more, or all of them collectively—that is to say:

(*a*.) The validity of two mutually exclusive patents.

(*b*). The validity of two patents with the same essential specification, neither more nor less, only the *claim* being divided between the two patents.

(*c*.) The validity of two patents for different material reflexes or embodiments of the same conception.

(*d*.) The validity of two patents—one for a process and the other for apparatus—no matter what or how intimate the relationship between such process and apparatus may be.

(*e*.) The validity of two patents—one with that part (or those clauses) of applicant's (appellant's) claim which specifies process, and the other with that part (or those clauses) of his claim which specifies apparatus.

An affirmance of the validity of two such patents is understood to be necessarily involved in the examiner's decision.

Fourth. The validity of the authority exercised by examiner's decision in this case of compelling applicants in general, and the present applicant (appellant) in particular, either to give up a part of his claim entirely or else to accept such protection as might be afforded by two patents bearing to each other the above-recited relationships severally, or any two or more, or all of them
70¾ collectively, except, of course, that the relationship of paragraph (*e*) above would belong to patents to applicant (appellant) in particular and not to the patents of applicants in general.

Fifth. The validity of the authority exercised by the examiner's decision in this case of forbidding applicants in general, and the present applicant (appellant) in particular, to claim all and several the new and useful matters of invention required to be disclosed by him or by them respectively in order to the obtainment of any patent whatsoever, and of refusing the application unless and until a part of such claim shall be canceled.

Sixth. The validity of the authority exercised by the examiner's decision in this case of refusing applications for patents in general, and the above-entitled application in particular, upon the mere ground that the application contains both process claims and apparatus claims.

Seventh. The validity of the authority exercised in this case of refusing the above-entitled application on the grounds of the examiner's decision.

Eighth. The validity and propriety of the examiner's decision if there should be found jurisdictional authority for making the same.

Ninth. The validity and propriety of affirming and enforcing the examiner's decision and the practice represented thereby, should the opinion be held that another decision than the one appealed from would have been inconsistent with the relationship of the examiner to other officers of the Patent Office and the Department of the Interior.

The entire grounds of the examiner's decision are understood to be set forth above, but if any other ground should exist it is requested that the same may be set forth in the examiner's
71–73 answer, in order that it may be considered at the hearing of the appeal

Appellant (applicant) concedes that the claim of his application does cover both process and apparatus, certain clauses or claims being made to process and other clauses or claims to apparatus.

He contends that he has the legal right to make his entire claim with separate clauses or claims of each kind in his said application, and that the examiner's action is an invasion of his said right and *ultra vires*, so far as any authority exists in the Patent Office and the Department of the Interior (either or both) or in the Executive and Judicial branches (either or both) of the Government.

He further contends that any provision of any act of Congress authorizing such action, if any such there be, is unconstitutional and void.

The appeal fee of $10.00 is presented herewith.

Respectfully submitted.

HERMAN FRASCH,
By CHAS. J. HEDRICK,
His Attorney.

* * * * * * *

74–84 In the United States Patent Office.

In re application for patent of Herman Frasch. Serial No., 736,843. Filed November 13, 1899. Improvements in means for removing incrustation of calcium sulphate from brine-heating surfaces.

WASHINGTON, D. C., *March 4th*, 1902.

To the Commissioner of Patents.

SIR: You are hereby notified of my appeal to the Court of Appeals of the District of Columbia from your decision, rendered on or about the 23d day of January, 1902, rejecting my above-entitled application and refusing me a patent for the invention set forth therein.

The following are assigned as reasons of appeal:

* * * * * * *

85–87 HERMAN FRASCH,
By CHAS. J. HEDRICK,
His Attorney.

* * * * * * *

88 In the Court of Appeals, District of Columbia.

In the matter of the application of Herman Frasch. No. 201, patent appeal docket.

It is stipulated by the Commissioner of Patents and the appellant (Herman Frasch) that the annexed official letter, dated November 13, 1899, be included in the evidence in the case and be printed by the clerk as a part of the record.

It is further stipulated that the clerk omit the following portions of the transcript in printing, namely:

(1) all endorsements on all papers; (2) pages 14 and 29 entire.

they being the petition and oath respectively; (3) all matter printed in red on pages 30, 39, 43, 45, 52; (4) all of pages 44, 53, 59, 65, 66, 67, 72, 73, 86, and 87; (5) reasons of appeal, being last nine lines of page 74, all of pages 75 to 84, both inclusive, page 85 down to, but not including, signature, said reasons of appeal being printed in the petition of appeal to this court, *ante*.

CHAS. J. HEDRICK,
Counsel for Herman Frasch.
JOHN M. COIT,
Counsel for Com'r of Patents.

89 Series of 1880. No. 736,843.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
WASHINGTON, D. C., *Nov.* 13, 1899.

SIR: I have to acknowledge the receipt of the petition, specification, oath, and drawing of your alleged improvement in means for removing incrustation of calcium sulphate from brine-heating surfaces, with fifteen dollars as the first fee payable thereon.

The papers are duly filed and your application for a patent will be taken up for examination in its order.

You will be duly advised of the examination.

Case will be taken up for examination in about six weeks.

Very respectfully,

C. H. DUELL,
Commissioner of Patents.

Herman Frasch, c/o Chas. J. Hedrick, 606 F St. N. W., city.

[Endorsed:] No. 201, patent appeals. In the matter of the application of Herman Frasch. Stipulation of counsel. Court of Appeals, District of Columbia. Filed Apr. 7, 1902. Robert Willett, clerk.

Endorsed on cover: Commissioner of Patents. No. 201, patent appeal docket. In the matter of the application of Herman Frasch. Court of Appeals, District of Columbia. Filed Apr. 4, 1902. Robert Willett, clerk.

51 { Docket Clerk, Mar. 2, 1904, U. S. Patent Office. }

Serial No. 736,843, Paper No. 17.

Petition.

Filed March 2, 1904.

Herman Frasch. Means for Removing Incrustation, etc. Filed November 13, 1899. No. 736,843.

WASHINGTON, D. C., *March* 2, 1904.

Hon. Commissioner of Patents.

SIR: In answer to the official letter of January 24, 1903.

In this letter the Commissioner (in person) said:

"Since your motion to reinstate your appeal is pending in the court, it is believed that the case should be preserved in the same condition as when the appeal was taken, until a final disposition is made of that matter."

Subsequently the court denied the motion; and applicant thereupon (on March 23, 1903) applied to the Supreme Court U. S. for a mandamus, in order that the appeal might be determined, notwithstanding the opinion of the Court of Appeals as to its jurisdiction. The Supreme Court issued a rule to show cause.

The rule was made returnable on October 19, 1903, but no hearing could be had until December 18 and 21, last. The decision of the court was handed down on February 23, ult. The full opinion could not be seen however, on Monday noon of the present week and was, in fact, first seen by the writer on yesterday afternoon.

The court said:

"We have just held in *United States* v. *Allen* that rule 41 of the Patent Office, in so far as it requires a division between claims for a process and claims for an apparatus, if they are related and dependent inventions, is invalid. We, however, held that mandamus to the Commissioner, not appeal to the Court of Appeals of the District, was the proper remedy."

52 The expression "related and dependent inventions" was used by the court in *United States* v. *Allen* in immediate connection with decisions in Hogg v. Emerson, 6 Howard, 437, and 11 Howard, 587, and Wyeth v. Stone, 1 Story, 273, as equivalent to the expressions "relate to a like subject, or are in their nature or operation connected together"; "for the same common purpose and auxiliary to the same common end"; "connected in their design and operation."

The telephone patent was cited as a case of related and dependent process and apparatus.

The court is understood to allow no rejection unless based upon the statutes, and said:

"If there is a divergence of views between the courts and the Patent Office and the divergence proceeds from a different interpretation of the statute, the views of the courts ought to prevail."

In view of the court's decision, applicant asks that you will direct the appeal heretofore taken to the examiners-in-chief to be heard by them.

Applicant also asks for such other or further relief as may be proper in the premises.

Respectfully,

HERMAN FRASCH,
By CHAS. J. HEDRICK,
His Attorney.

53 M. H.

Serial No. 736,843, Paper No. 18.

United States Patent Office.

Comm'r's Decision.

Recorded, Vol. 79, page 205.

Ex Parte Herman Frasch. Means for Removing Incrustation of Calcium Sulphate from Brine Heating Surfaces.

Petition.

Application Filed November 13, 1899, No. 736,843.

Mr. Charles J. Hedrick for petitioner.

This is a petition that an appeal heretofore taken in the above-entitled case be forwarded to the examiners-in-chief for determination.

The appeal was taken from a requirement by the primary examiner for division between claims to the process and claims to the apparatus, and under the practice which has always prevailed in this office, the examiner refused to forward the appeal. The applicant was notified that his remedy was by petition to the Commissioner, under rule 145, and not by appeal to the examiners-in-chief, and he thereupon filed such petition, and after full consideration the examiner's requirement for division was sustained and the petition was denied. (98 O. G., 1967.) An appeal was taken from that decision to the Court of Appeals, and the appeal was dismissed by the court, on the ground that the decision was not appealable. (100 O. G., 1977.) The applicant then filed a petition in the Supreme Court for a mandamus, directing the Court of Appeals to hear
54 and determine the appeal, and that petition was dismissed. (109 O. G., 554.)

The applicant bases his present petition that his appeal be forwarded to the examiners-in-chief upon the decision of the Supreme Court in U. S., *ex rel.* Steinmetz, v. Allen, 109 O. G., 549. It appears from that decision that a requirement for division is to be regarded as a rejection of the application and is appealable to the examiners-in-chief, and that the applicant is entitled to demand that his appeal be forwarded, notwithstanding the fact that the Commissioner has reviewed the examiner's decision and affirmed it upon the petition of the applicant. The appeal in the present case will therefore be forwarded to the examiners-in-chief, with a statement by the primary examiner of the reasons for his requirement for division.

The Supreme Court has said that rule 41 is invalid, in so far as it requires division in all cases between process and apparatus, the reason being that it leaves no room for the exercise of discretion in view of the circumstances of the particular case. It is said that process and apparatus may be completely independent in some cases and may be related and dependent in others, and that therefore it is proper to require division in some cases and not proper in others. It is a matter calling for the exercise of discretion in each case. There is nothing in the decision of the Supreme Court indicating that the provisions of the first paragraph of rule 41 are invalid, requiring division between independent inventions, but on the contrary those provisions are approved. That paragraph is as follows:

"Two or more independent inventions cannot be claimed in one application; but where several distinct inventions are dependent upon each other and mutually contribute to produce a single result they may be claimed in one application."

55 The court has announced no new principle controlling the determination of the question whether the inventions are independent and should be divided, and therefore the above-quoted section of the rule may be applied as heretofore. No new considerations enter into the question of division, but the examiner's ruling that the inventions are independent is subject to review, in the first instance, by the examiners-in-chief, instead of by the Commissioner.

The court has pointed out that the question of division does not relate to the *merits*, if that term has the meaning heretofore given it in the Patent Office, and it appears therefore that the question to be determined by the examiner and the examiners-in-chief is not whether the claims would be sustained as valid if granted in one patent, but whether the inventions are related and dependent.

In their desire to secure to the inventor the reward for a meritorious invention, the courts will sustain a patent, notwithstanding irregularity in the proceedings and informalities in the grant, but it does not follow that they approve such irregularity and informalities and that subsequent patents are to exhibit them. They sustain patents covering two or more independent inventions, but it does not follow that this office must permit independent inventions to be claimed in one patent. The Supreme Court has expressly

ruled in U. S., *ex rel.* Steinmetz, v. Allen, *supra*, that the question of division is a matter of discretion to be left largely to the Patent Office, for it says:

"* * * discretion can be exercised, and when exercised we may say in passing, except in cases of clear abuse, the courts will not review it."

56 The petition is granted.

F. I. ALLEN,
Commissioner.

March 22, 1904.

57 Appeal No. 25,664, Paper No. 2.

Examiner's Statement.

U. S. Patent Office,
Apr. 4, 1904,
Mailed.

United States Patent Office.

In re Application of Herman Frasch. Filed November 13, 1899. Serial No. 736,843. Means for Removing Incrustation of Calcium Sulphate from Brine-heating Surfaces.

Before the Board of Examiners-in-chief, on Appeal.

Examiner's Statement.

Before the board of examiners-in-chief on appeal from the requirement of division between subjects of invention in claims 1 to 3, for the process, and claims 4 to 5, for the apparatus, to wit:

1. "The process of removing incrustations of calcium sulphate from heating surfaces, consisting in condensing steam in contact with said surfaces by carrying off the heat from the opposite side of the heat-conducting walls, substantially as described."

2. "The process of removing incrustations of calcium sulphate from heating surfaces, consisting in condensing steam in contact with said surfaces by transferring its heat to brine of lower temperature on the opposite side of the heat-conducting walls and so carrying off the heat, the steam and brine being applied alternately to each side of said heat-conducting walls so that the heating of the brine and the removal of the incrustation from a previous heating proceed together, substantially as described."

3. "The process of removing incrustations of calcium sulphate from heating surfaces, consisting in condensing steam in contact with said surfaces by transferring its heat to saturated boiling brine of lower temperature on the opposite side of the heat-conducting

walls and so carrying off the heat, the steam and brine being applied alternately to each side of said heat-conducting walls so that the evaporation of the brine with precipitation of salt and the removal of the incrustation from a previous heating proceed together, substantially as described."

4. "An apparatus divided into chambers by heat-conducting walls and provided as to one chamber with a steam supply pipe, a brine supply conduit, and means for withdrawing the products of the steam-condensing and brine-heating operations, and as to other chamber with a steam supply pipe, means for supplying a cooling medium, and means for withdrawing the products of the steam-condensing and the cooling-medium-heating operations, substantially as described."

58 5. "An apparatus divided into chambers by heat-conducting walls and having each chamber provided with a steam supply pipe, a brine supply conduit, and means for withdrawing the products of the steam-condensing and brine-heating operations, substantially as described."

6. "An apparatus divided into chambers by heat-producing walls and having each chamber provided with a steam-supply pipe, a brine-supply conduit and means for withdrawing water from the steam-condensing operation and water vapor and salt from the brine-heating operation, substantially as described."

The question at issue between this appellant and the primary examiner is not to be found in any of the statements of the appellant. The question to be considered is, however, stated by the Commissioner in *Ex parte* Frasch to be "*not* whether the claims would be sustained as valid if granted in one patent, but whether the inventions are related and dependent" (109 O. G., 1339), and apparently how closely related and dependent. This decision also brings out the fact that the question of patentability is not at this time to be considered, either by the primary examiner or the examiners-in-chief.

It is to be noted that the examiner held that *different subjects* of invention were presented (see first letter), hence the examiner did not rely solely on rule 41 requiring division, but asserted that the subjects of invention were different (see first office letter). The issue then is whether these inventions are so *related* and *dependent* that the appellant has the right to insist that they be presented in one application in spite of all questions of office convenience and practice. The examiner asserts that they are not. As stated by the Commissioner in his last decision, it is possible that the courts might hold such claims valid even if in one application, but that is *not* the question here, so that such decisions,—where the courts have sustained patents containing both process and apparatus claims,—are not the only guide in this case, as apparently sought to be contended by appellant.

The examiner asserts and will attempt to prove the following points:

59 1. That some discretion is left to the office in deciding whether an applicant shall or shall not divide his application;

2. That such discretion has been and is exercised in this case;

3. That this discretion was and is properly exercised in this case;

4. That all appellant's contentions that, if he divides, one of his patents would be invalidated by the other are barren of force and effect in view of the decision in Steinmetz v. Allen, 109 O. G., 549.

First. That discretion is left with the office was decided by the court in Bennett v. Fowler (8 Wall., 445), which is cited with approval by the Supreme Court in Steinmetz v. Allen, *supra*.

Second. This discretion was exercised in this case when the examiner did and still does insist that the subjects of invention were and are different and properly separable.

Third. Mr. Justice McKenna in deciding the case of Steinmetz v. Allen, *supra*, on page 552, mentioned the various cases which might present themselves wherein a process and an apparatus used in carrying it out are set forth. These may be considered as of three kinds:

1. Where process and apparatus are completely independent (Cochrane v. Deener, 94 U. S., 780);

2. Where they are so closely related that it is difficult to distinguish between them including

(*a*.) The process from the function of the apparatus. In such case the apparatus would be the dominant thing (Steinmetz v. Allen, *supra*);

(*b*.) Where the dominance is reversed (Telephone cases, 126 U. S., 1);

3. Where they are related, but not so closely as to be difficult to distinguish.

The examiner holds that the appellant must prove his case to be included in the second of these classes, or else must acquiesce

60 in the requirement of division. It is clear that in inventions of the first class division is necessary regardless of office discretion. In fact it must be required, and it would be improper not to require it. In the third class it is clear that discretion is properly exercised. It is needless to prove that the office has uniformly required division in cases under class 3; it was the uniform requirement in classes 1, 2 and 3, ignoring the existence of class 2 or the proper joinder in such cases, that led the Supreme Court to declare clauses 2 and 3 of rule 41 invalid (page 552 of Steinmetz dicision). It is therefore proper to require division in cases under class 3. Is the invention in this case included in class 2?

Apparently at the outset this appellant was of opinion that he was the inventor only of the apparatus, as his petition, preamble and oath cover only the "means for removing" * * * consequently the process claims filed in the original application are without support.

The invention relates to the removal of the incrustation of calcium

sulphate from heating surfaces (see lines 1 and 2 of page 1 of application). His apparatus has nothing whatever to do with an incrustation of calcium sulphate or of anything else. It is equally as useful for a beer cooler or a water still. On the other hand, his process is inconceivable without an incrustation. It is contended that this application should come under class 1, and in no way is it of class 2. Attention is called to the language of Robinson on Patents, cited with approval by Justice McKenna in the Steinmetz decision: "A process cannot be joined with the apparatus that performs it * * * unless they are to such an extent inseparable that the existence of one of them is dependent on that of the other." Unless the appellant can show that such is the case here, he must yield to the discretion of the office. It is clear from the
61 above, however, that such is not the case here. His case falls in class 1 or class 3.

4. The fourth point was settled when the Supreme Court decided the case of Steinmetz v. Allen,—see page 552, lines 25 to 40 of 2nd column:

"Counsel for petitioner have explained that right by the embarrassments caused by its denial, one of which is that, by disclosing the apparatus in his application for the process, he might lose the right to and a patent for the apparatus, and to sustain that view James *vs.* Campbell (104 U. S., 356) is cited. We are not prepared to admit such consequences not that James vs. Campbell so decides. If the classification of the statute makes a distinction between the different kinds of inventions—between a process and an apparatus—and requires or permits a separate application for each, it would seem to follow irresistably that an application and patent for one would not preclude an application and patent for the other, and the order of the application could not affect the right which the law confers."

It is respectfully recommended that the requirement of division in this case be sustained.

J. B. LITTLEWOOD,
Examiner, Division 6.

Washington, D. C., April 4, 1904.

62 { Examiners-in-chief, Apr. 9, 1904, U. S. Patent Office. }

Room 318.

Herman Frasch. Means for Removing Incrustation of Calcium Sulphate from Brine-heating Surfaces. Filed November 13, 1899. No. 736,843.

WASHINGTON, D. C., *April* 9, 1904.

Hon. Commissioner of Patents.

SIR: In answer to the appeal, the examiner says that applicant's "apparatus has nothing whatever to do with an incrustation of cal-

cium sulphate or of anything else. It is equally as useful for a beer cooler or a water still" (page 4 of answer). From these words, with their context, the examiner is understood to admit (correctly) that the process is dependent on the apparatus; but (erroneously) to argue against the converse dependency of the apparatus on the process; and to assume (erroneously) that to be "related and dependent" the process and the apparatus must be reciprocally dependent on each other; whereas, the dependency of either on the other is all that is contemplated by the decision of the Supreme Court, U. S.

Applicant describes said apparatus as a means for removing calcium sulphate; this is its intended use, required to be set forth by section 4888, R. S. It is dependent upon the process; as the latter is upon it. Applicant contemplates and knows no other use for it; as he contemplates and knows no way of utilizing the process other than by the aid of the apparatus; although, if he did, the fact would be immaterial; since the primary or intended use of each is in conjunction with the other.

If, therefore, it were the fact that the apparatus might be "equally as useful" in some analogous or non-analogous, known or unknown employment, the process and the apparatus would still be
63 related and dependent inventions, "*parts* of the thing for which the patent is demanded;" (sec. 4913, R. S., cf. sec. 4916 and 4922); the description of both process and apparatus would be proper and, indeed, necessary; and the right to *claim* both in one and the same patent would exist.

Nevertheless, it seems proper to ask further information touching the examiner's allegations.

In operating as specified by applicant, the walls of the apparatus receive the incrustation of calcium sulphate, and the pipes and valves control the delivery to each chamber in turn of the brine which deposits calcium sulphate and the steam which removes the incrustation left by each batch of brine, the removal being effected as said steam is heating the next succeeding batch. Applicant does not perceive how it can be said of such an apparatus that it "has nothing whatever to do with an incrustation of calcium sulphate or of anything else."

C. J. H. Before filing.

The formation of that incrustation and the difficulty caused by it furnished the immediate reason for the invention of both the process and apparatus: they constitute the reason for existence of each.

If attempt were made, following the examiner's suggestion, to use the apparatus as "a beer cooler or a water still," it is not understood that, in either case, an objectionable incrustation would form analogous to the incrustation of calcium sulphate on brine-heating surfaces and removable in the same way. If there would, then applicant's invention is broad enough to include the so applied apparatus and the process of removing the so obtained incrustation. If there would not (and the examiner in the words "or of anything else" seems to deny any such formation), then applicant fails to see how his brine-

heating apparatus could possibly be "equally as useful for a beer cooler or a water still."

64 A supplemental answer is requested, explaining the meaning of the words quoted above from the answer and showing, first, the manner of employing applicant's apparatus (*a*) as a beer cooler, and (*b*) as a water still, in accordance with the examiner's suggestion, and, second, what advantage would follow the use of applicant's apparatus for each of said purposes.

As applicant understands the matter, he has an absolute legal right to protect in one patent what the law requires him to disclose therein as a condition precedent for obtaining the same, and that this right would, if it were possible, be even more absolute when he must otherwise be in the dilemma of abandoning a claim outright or of subsequently claiming what is necessarily disclosed in a prior patent. In the face of a legal right one must postpone as immaterial "all questions of office convenience and practice" (examiner's answer, page 2).

But applicant cannot conceive how office convenience is involved in the rejection of the present case or in similar rejections; and, in order to inform applicant as to the question of office convenience supposed to be here involved, it is requested that further explanation be given on this head in the supplemental answer.

In asking further information touching these matters, applicant, of course, does not waive or concede anything in respect to the sufficiency of the answer in any part, in any manner, or to any extent.

Respectfully,

HERMAN FRASCH,
By CHAS. J. HEDRICK,
His Attorney.

65

U. S. Patent Office,
Apr. 13, 1904,
Mailed.

United States Patent Office.

In re Application of Herman Frasch. Filed November 13, 1899. Serial No. 736,843. Means for Removing Incrustation of Calcium Sulphate from Brine-heating Surfaces.

Before the Board of Examiners-in-chief on Appeal.

Supplementary Statement.

Appellant having requested further information, this case has been remanded to the primary examiner. In view of the decisions of the courts and of the Commissioner, the original grounds for requiring division have considerably changed, and it seems no more than right that the appellant be granted his request.

Appellant's deduction that the examiner admits that the process

depends on the apparatus must have been reached by a process of reasoning unknown to the examiner, as it appears, from the statement, that he held them "entirely independent inventions" (page 4, line 22).

The points sought to be emphasized by the examiner were that a patentee, under our patent laws, is entitled to all the uses of his *apparatus*, known or unknown. On the other hand, "a process is a mode of treatment of certain materials to produce a given result; an act or a series of acts performed upon the subject-matter to be transformed and reduced to a different state of thing." * * * The process requires that certain things be done with certain substances and in a certain order" (Cochrane v. Deener, 11 O. G., 687).

A glance at the claims in this case shows that the apparatus claims do not in any way hint or refer to *incrustation* of any kind and that all the process claims *do* refer to *incrustation of calcium sulfate.*

Therefore, any one, if this were a patent, who treated this
66 certain material, *i. e.*, incrustations of calcium sulfate, in the way appellant does, and regardless of what apparatus was used, would be an infringer of the process claims. On the other hand, any one using the identical apparatus shown and described in this case as a beer cooler would, if this were a patent, be an infringer, although the process claims would not be infringed, for, as applicant correctly assumes, there would presumably be no incrustation of calcium sulfate. In order to make this meaning clearer, and to avoid any possible objection, it is suggested that the words "equally as useful," page 4, lines 10 and 11, will be changed to *also applicable.* This will explain the meaning of the words used, which is the first specific request of appellant.

If for "steam" in applicant's description we read *beer* and for "brine" read *cooling medium* (which, by the way, might well be chilled brine), we have a beer cooler. If, instead of brine, ordinary water be used, we have a water still, or perhaps, better, what would be termed a water *heater.* This answers appellant's second request.

As to what advantages follow in the above cases, the examiner declines to state, though several suggest themselves; as he has no desire to anticipate any use in that line that others may care to employ. Moreover, it is immaterial whether there be any advantages over the art in those classes. The appellant does not deny that his apparatus is capable of use without change for those purposes. The examiner has pointed out how, and there is no reason nor right to require from him further information as to possible advantages.

The remainder of this request relates to matters for the examiners-in-chief to decide, as the examiner has placed himself clearly on record already. It may, however, be stated that it is not believed that language used by the Supreme Court in dismissing this case
should be interpreted by the meaning given by the courts to
67 those particular words when they were trying to uphold a patent in order to reward a meritorious inventor, and, in any

case, this question was settled by the Commissioner when he said in his decision in this case "not whether the claims would be sustained as valid if granted in one patent." It is obvious that the examiner is and must be governed by this decision.

Respectfully submitted, J. B. LITTLEWOOD,
Examiner, Division VI.

Washington, D. C., April 13, 1904.

68 Appeal No. 25,664, Paper No. 7.

Decision.

Recorded, Vol. 76, p. 3.

No. 25,664. U. S. PATENT OFFICE, *July* 19, 1904.

Before the Examiners-in-chief on Appeal.

Application of Herman Frasch for a Patent for an Improvement in Means for Removing Incrustation of Calcium Sulphate from Brine Heating Surfaces. Filed November 13, 1899. Serial No. 736,843.

Mr. Chas. J. Hedrick for appellant.

The claims appealed are:

"1. The process of removing incrustations of calcium sulphate from heating surfaces, consisting in condensing steam in contact with said surfaces by carrying off the heat from the opposite side of the heat-conducting walls, substantially as described.

2. The process of removing incrustations of calcium sulphate from heating surfaces, consisting in condensing steam in contact with said surfaces by transferring its heat to brine of lower temperature on the opposite side of the heat-conductiug walls and so carrying off the heat, the steam and brine being applied alternately to each side of said heat-conducting walls so that the heating of the brine and the removal of the incrustation from a previous heating proceed together, substantially as described.

3. The process of removing incrustations of calcium sulphate from heating surfaces, consisting in condensing steam in contact with said surfaces by transferring its heat to saturated boiling brine of lower temperature on the opposite side of the heat-conducting walls and so carrying off the heat, the steam and brine being applied alternately to each side of said heat-conducting walls so that the evaporation of the brine with precipitation of salt and the removal of the incrustation from a previous heating proceed together, substantially as described.

4. An apparatus divided into chambers by heat-conducting walls and provided as to one chamber with a steam supply pipe, a brine supply conduit, and means for withdrawing the products of the

steam-condensing and brine-heating operations, and as to other chamber with a steam supply pipe, means for supplying a cooling medium, and means for withdrawing the products of the steam-condensing and the cooling-medium-heating operations, substantially as described.

5. An apparatus divided into chambers by heat-conducting walls and having each chamber provided with a steam supply pipe, a brine supply conduit, and means for withdrawing the products of the steam-condensing and brine heating operations, substantially as described.

6. An apparatus divided into chambers by heat-producing walls and having each chamber provided with a steam-supply pipe, a brine-supply conduit and means for withdrawing water from the steam condensing operation and water vapor and salt from the brine-heating operation, substantially as described."

69 The decision appealed from is that either the machine claims or the art claims of this application must be taken out of the application. The original ground for that decision was that the two sets of claims severally present two different inventions.

As authority for the decision the principal examiner cited not merely the lately abolished part of rule 41 but rather the whole of rule 41, evidently meaning to rely on the first and the second paragraphs of that rule.

The points of appeal are six in number. Each raises the validity or the validity and propriety of the decision. Each does no more than to deny the authority of the Commissioner to make a rule which requires such a division or to cause such a division to be made. No point traverses the grounds of the decision of the principal examiner.

The principal examiner in his first statement to the examiners-in-chief of the grounds of his decision asserts the independence of the machine from the art and the independence of the art from the machine. He further states that "the issue then is whether these inventions are so *related* and *dependent* that the appellant has the right to insist that they be presented in one application in spite of all questions of office convenience and practice. The examiner asserts that they are not. As stated by the Commissioner in his last decision, it is possible that the courts might hold such claims valid even if in one application, but that is *not* the question here, so that such decisions,—where the courts have sustained patents containing both process and apparatus claims,—are not the only guide in this case, as apparently sought to be contended by appellant."

The principal examiner also states that a reasonable discretion is reposed in officers of the Patent Office in determining this question and that he has exercised reasonable discretion in making his decision in this case.

Of the facts of the case the principal examiner states:

"The invention relates to the removal of the incrustation of calcium sulphate from heating surfaces (see lines 1 and 2 of page 1 of

application). His apparatus has nothing whatever to do with an incrustation of calcium sulphate or of anything else. It is equally as useful for a beer cooler or a water still. On the other hand, his process is inconceivable without an incrustation."

70 Referring to a point of appeal which asserts that if this division of claims be had, the applicant would be compelled to lose a part of his invention, the examiner states:

"The fourth point was settled when the Supreme Court decided the case of Steinmetz v. Allen,—see page 552, lines 25 to 40 of 2nd column:

"'Counsel for petitioner have explained that right by the embarrassments caused by its denial, one of which is that, by disclosing the apparatus in his application for the process, he might lose the right to and a patent for the apparatus, and to sustain that view James vs. Campbell (104 U. S., 356) is cited. We are not prepared to admit such consequences nor that James vs. Campbell so decides. If the classification of the statute makes a distinction between the different kinds of inventions—between a process and an apparatus—and requires or permits a separate application for each, it would seem to follow irresistably that an application and patent for one would not preclude an application and patent for the other, and the order of the application could not affect the right which the law confers.'"

Finally the principal examiner states in effect that the burden of proof is on the applicant to establish such a relative dependence of these two different inventions as entitles him to insist that they be maintained in one application, and holds that the applicant has failed to establish that dependence.

In a response to a request made by the attorney for this applicant for further information concerning certain parts of the statement by the principal examiner relating to the relative independence of the machine and the art, the examiner amplified his statement in that particular.

Thereupon the attorney for the applicant in an extensive brief traverses the points of the examiner's statement, asserting, (A) that the action is without authority of law; (B and E) that there is no room for discretion in this case; (C and E) that discretion has not been properly exercised; (D) that to sustain the examiner's decision would be to disobey the decision of the Supreme Court in Steinmetz v. Allen, Commissioner; (F) that the principal examiner erred in requiring a division of these claims.

At great length he discusses those points including the doctrine of independence and dependence of related inventions.

71 This application was taken to the Supreme Court of the United States to obtain a decision that this appeal should be forwarded to the examiners-in-chief for their revision and determination of the question raised by the appeal. The case was dismissed as not based on the proper remedy.

The court said:

"We have just held in *United States* v. *Allen* that rule 41 of the Patent Office, in so far as it requires a division between claims for a process and claims for an apparatus, if they are related and dependent inventions, is invalid. We, however, held that mandamus to the Commissioner, not appeal to the Court of Appeals of the District, was the proper remedy."

It would appear from this statement that the court in Steinmetz v. Allen, Commissioner, had held that a requirement for a division of claims is always error when required of any art and apparatus, if they be related and dependent inventions. This is not what the court held in Steinmetz v. Allen, Commissioner, as will appear hereinafter when that case is discussed.

After the dismissal of the case by the Supreme Court of the United States, the applicant made petition to the Commissioner of Patents to cause the appeal and a statement by the principal examiner to be forwarded to the examiners-in-chief for their determination whether the required division was correct.

The Commissioner after granting the prayer of the petitioner said:

"The Supreme Court has said that rule 41 is invalid, in so far as it requires division in all cases between process and apparatus, the reason being that it leaves no room for the exercise of discretion in view of the circumstances of the particular case. It is said that process and apparatus may be completely independent in some cases and may be related and dependent in others, and that therefore it is proper to require division in some cases and not proper in others. It is a matter calling for the exercise of discretion in each case. There is nothing in the decision of the Supreme Court indicating that the provisions of the first paragraph of rule 41 are invalid, requiring division between independent inventions, but on the contrary those provisions are approved. That paragraph is as follows:

'Two or more independent inventions cannot be claimed in one application; but where several distinct inventions are dependent upon each other and mutually contribute to produce a single result they may be claimed in one application.'

The court has announced no new principle controlling the determination of the question whether the inventions are inde-
72 pendent and should be divided, and therefore the above-quoted section of the rule may be applied as heretofore. No new considerations enter into the question of division, but the examiner's ruling that the inventions are independent is subject to review, in the first instance, by the examiners-in-chief, instead of by the Commissioner."

* * * * * * *

"In their desire to secure to the inventor the reward for a meritorious invention, the courts will sustain a patent, notwithstanding irregularity in the proceedings and informalities in the grant, but

it does not follow that they approve such irregularity and informalities and that subsequent patents are to exhibit them. They sustain patents covering two or more independent inventions, but it does not follow that this office must permit independent inventions to be claimed in one patent. The Supreme Court has expressly ruled in U. S., *ex rel.* Steinmetz v. Allen, *supra*, that the question of division is a matter of discretion to be left largely to the Patent Office, for it says:

'* * * discretion can be exercised, and when exercised we may say in passing, except in cases of clear abuse, the courts will not review it.'"

In deciding this question we will be governed by the rule established by the Supreme Court in Steinmetz v. Allen, Commissioner and by the unabolished part of rule 41.

We proceed to determine the rule of that decision.

The Supreme Court say:

"There is nothing in the language of the section (4886) which necessarily precludes the joinder of two or more inventions in the same application. But the section does distinguish inventions into arts (processes), machines, manufactures and compositions of matter, and the earliest construction of the law denied the right of joinder. An exception, however, came to be made in cases of dependent and related inventions."

We are unable to find in the cases cited, to wit, Hogg v. Emerson, 6 Howard, 437; 11 Howard, 587 and Wyeth v. Stone, 1 Story, 173, any exception to the denial of the right of joinder of inventions of different statutory classes.

An extreme latitude of the outward limit of the invention of a patent admitted in the remarks in Wyeth v. Stone concerning two separate machines was induced by language then in the statute which has since been expunged from the statute in order to prevent the allowance of two separate machines in one patent.

The cited cases merely sustained the right of joinder of the parts of a single machine in a patent for the machine (Hogg v. Emerson), and denied the right of joinder in one patent of two separate
73 and independent machines for different immediate purposes, although the two machines were used one after the other in the same industrial art. (Wyeth v. Stone.)

From these machine cases the court derive the principle that inventions may be joined which "relate to a like subject or are in their nature or operation connected together," or "are connected in design and operation" (Hogg v. Emerson) or are "for the same common purpose and auxiliary to the same common end" (Wyeth v. Stone).

It is not to be assumed that the Supreme Court would have made those broad statements of principle had they had before them a case wherein was presented the question of joinder of two unitary inventions of different statutory kinds.

If the rule of those machine cases be the rule in determining any

case of joinder of two inventions differing in statutory class, then all kinds of inventions distinguished in the statute may be presented in one application and the unity of the invention of a patent does not exist.

We derive no assistance from these authorities in determining the question whether an art and a machine can be joined in one application.

From those cases the court derive the broad principle that inventions may be joined in one application when they are related and dependent. But the court are careful to limit the principle by holding that the two statutory inventions must constitute one invention.

The court say:

"As to right, petitioner contends that a union by an inventor of process and apparatus claims which are essentially the same invention, is given by the patent laws, and that rule 41, so far as it takes that right away, is repugnant to those laws and invalid."

* * * * * * *

"The unity of the inventions claimed by petitioner in the case at bar we may assume. It is not denied by respondent. Petitioner had, therefore, the right to join them in one application."

74 So it appears that the Supreme Court found that in the statute the invention of a patent is unitary (R. S. sec. 4884–6–7–8, 4890–92–93, 4916); and that the units of a patent are specified and distinguished from each other in the statute; and that they are an art, a machine, a manufacture and a composition of matter; and that the statute provides that a patent may be obtained for one of those unitary inventions, and does not provide that a patent cannot be obtained for two or more of those unitary inventions.

Evidently the court considered those inventions as presumptively distinguished by the statute as different and independent inventions.

The case as to right turned on the question whether a machine or an art can be one unitary invention.

The court, as above quoted, said in effect, of the machine and art of the application before them that they could assume that the two are one unitary invention because it was made an issue of fact by the petitioner and had not been denied by the respondent, and that that assumed and admitted fact compelled the conclusion that the petitioner had a right to join them in one application.

We regard this assumption of the existence of a fact as a mere argumentary assumption amounting to no more than this, namely, if it be a fact that this machine and this art are one unitary invention, it follows from the fact that the two things can be claimed in one and the same application.

The court in determining the oneness of an art and a machine considered their relations to one purpose and to each other.

There is one passage concerning the relations between the art and the machine, reading as follows:

"Can it be said that a process and an apparatus are inevitably so independent as never to be 'connected in their design and operation?' They may be completely independent. (Cochrane v.
75 Deener, 94 U. S., 780.) But they may be related. They may approach each other so nearly that it will be difficult to distinguish the process from the function of the apparatus. In such case the apparatus would be the dominant thing. But the dominance may be reversed and the process carry an exclusive right, no matter what apparatus may be devised to perform it."

"Related" in this passage does not have the meaning of the word as used in Hogg v. Emerson. It means here not their relation to a common purpose, but rather their relation to each other.

All that we can gather from this passage is that an art and a machine may be entirely independent each of the other, or that each may dominate the other; and that when the art cannot be distinguished from the functions of the machine, the dominance of the machine is so complete that there is no art.

The relations, as to purpose, of an art and a machine performing the art are plain. Being different means for effecting the same result, they relate to a common purpose.

That relatively to each other they may be dependent or independent is clear, and is stated in the decision of the court. But we are unable to find anywhere in the decision any test designated for determining the character of the dependence which makes the two inventions, which under the statute are presumptively independent, to be so dependent as to become one invention.

Therefore we are compelled to ascertain the proper test or tests without aid from the decision.

The rule of the Supreme Court might read:

Under the statute an art and a machine used to perform the art are presumptively different and independent inventions and may not be claimed in one and the same application.

But where an art and the machine used to perform it are so dependent as to constitute a unitary invention, they may be claimed in one and the same application.

We are to be governed by that rule and to determine the test or tests of the character of the relation and of the dependence
76 which makes these two essentially different and presumptively independent inventions to be a unitary invention.

At the outset it is necessary to consider some fundamental principles in order to clarify the question to be decided.

One of them is, what is an invention which is a subject of a patent?

It is something which is "invented," that is to say, contrived, and it must be contrived by man. It is a man-contrived art, machine, manufacture or composition of matter, in contradistinction to a natural art, machine, an article not a composition of matter, or a composition of matter. Evidently so, for whatever be natural cannot be said to be contrived by man. Of natural processes or things

man can do no more than to contrive a means for rendering them useful. That means may be one of the other statutory inventions. It usually is an art.

The art of sec. 4886 of the statute is not the art of industry which is mentioned in sec. 4888. The art of industry includes all of the statutory inventions. The art of the statute is apart from and outside of each of the other statutory inventions. It is understood that, when what a man has contrived is not a machine, a manufacture or a composition of matter, it must be an art or be not any statutory invention.

The statute does not provide that any person who has invented a new and useful idea may obtain a patent therefor.

"We find here (in R. S., sec. 4886) no authority to grant a patent for a 'principle,' or a 'mode of operation,' or an *idea*, or any other abstraction." (Burr v. Duryea, 1 Wallace, 537; Fuller v. Yentner, 11 O. G., 551.)

Of the mental origin of either of the statutory inventions it is enough to know that it was contrived by man. A oneness of basic idea in two statutory inventions is not to be regarded as establishing the oneness of the two inventions. It is enough to know that from one idea has resulted two statutorily distinguished and different inventions. (Durand Co. v. Green *et al.*, 67 O. G., 814.)

77 Nor is the character of the thinking to be regarded as determining their oneness. By what easiness or tribulation of thought either has been contrived or by the use of what mental faculty or faculties, if there be any separate and distinct action of what are called mental faculties, is of no consequence in determining the question.

Every art, machine, manufacture or composition of matter which is at sight evidently contrived by man is an invention.

Whether it is a new invention is another question. The novelty of the statute is not absolute novelty. The statute defines novelty by exclusion. The novelty of the statute exists when the invention is found to be "*not* known *or* used by others in this country, before his (the contriver's) invention (contriving) or discovery thereof, and *not* patented or described in any printed publication in this or any foreign country before his (the contriver's) invention (contriving) or discovery thereof" * * * R. S., sec. 4886.

The parenthetical words are ours, put there to indicate that one of the two meanings in the statute of the word invention, to wit, the contriving and the thing contrived, which is intended in this section.

If any of the four inventions of the statute be outside of these negations it has the novelty of the statute. Whether at the date of its contrivance by the alleged first contriver it was known by others in this country is to be determined by a comparison of the contrivance with the contrivances which others at that date did know, and by determining whether, knowing what they then did, they would or would not have the knowledge required to do or make

the contrivance under consideration. And the useful results achieved by the contrivance are to be taken into consideration as known to be or not known to be expected.

The statute does not require for any of its purposes that the
78 mental acts of an inventor shall be searched or considered. Whoever gropes around in the dark field of rational psychology to find facts and attempts to use those which he imagines he has found there, to interpret and apply the law of patents, will reach conclusions as obscure as their source. They are they who bewildered say that the invention of the statute cannot be defined.

In order to determine of the two inventions before us and alleged to be statutory inventions, whether they are one invention, we consider their character as contrived things without regard to the character or degree of the mental action, the thinking, by which they were contrived.

The presumption on the face of the statute is that two inventions, a machine and an art are not one invention. Whoever asserts that those essentially different inventions become in any case one invention, must establish their unity as one invention.

If ever these two statutory inventions become one invention they must become so by their relations. The art and the machine are producer inventions. The other two inventions, the manufacture and the composition of matter, are product inventions. The producer inventions are different means for producing the product inventions or for changing their physical constitution or properties.

The art, broadly speaking, is an act or series of acts. It has no embodiment. It has no ability to operate itself. It must be performed by some embodied agent. A machine is its agent. The machine may be a man-contrived machine or a natural machine, for instance, a man. The art is, in the statute, set apart from the machine, the other producer invention, as a separate and distinct and independent invention.

The art of sec. 4886 of the statute must be something more than an act or a series of acts which is or are performed by an energized machine. It was provided for the purpose of including all
79 inventions which include the use of something which is not man-conceived, some natural thing or process. An art must be performed, if by the use of a machine, partly by the machine and partly by some natural force operating on or in a substance to change its physical constitution or properties. This is true whether the machine be man-made or natural. That is to say it is true as to what are nowdays called manipulative arts.

The machine may bring the natural force against the material so as to set into operation a force of the material to co-operate with its own force, or it may bring two substances together so that their natural forces shall coöperate, each and all to change the material or substance into a different material or to change the constitution or qualities of the one or more than one material.

Whenever the force of the machine and the natural force so coact

as to produce such results on the thing acted on, there is the art of the statute. But when the only force operating on an object to effect the result of the machine is the dynamic force of the machine, the act or series of acts of the machine is not the art of the statute. These acts are the mere function of the machine and the mere function of a machine is not a statutory invention.

That a natural process or thing, or the function or result of a machine, cannot be the subject of a patent, and that claims for them are invalid, see the following cases:

O'Reilly v. Morse, 15 Howard, 62.
Corning v. Burden, 15 Howard, 252.
Burr v. Duryea, 1 Wallace, 931.
Fuller v. Barnum v. Yentzer, 12 O. G., 551.
Fuller v. Barnum v. Goodrich, 12 O. G., 597.
Risdon Works v. Medart, 71 O. G., 751.
Westinghouse v. Boyden Co., 83 O. G., 1067.
Busch v. Jones, 99 O. G., 229.
New v. Warren, 22 O. G., 587.
McKay v. Jackman, 22 O. G., 85.
In re Cunningham, 102 O. G., 824.
Moulton v. Comm'r of Patents, 61 O. G., 1450.

In Westinghouse v. Boyden Co., *supra*, appears the following passage:

80 "Where the process is simply the function or operative effect of a machine, the above cases are conclusive against its patentability; but where it is one which, though ordinarily and most successfully performed by machinery, may also be performed by simple manipulation, such, for instance, as the folding of a paper in a peculiar way for the manufacture of paper bags, or a new method of weaving a hammock, there are cases to the effect that such a process is patentable, though none of the powers of nature be invoked to aid in producing the result. (Eastern Paper Bag Co. v. Standard Paper Bag Co., C. D., 1887, 537; 41 O. G., 231; 30 Fed. Rep., 63; Union Paper Bag Machine Co. v. Waterbury, 39 Fed. Rep., 389; Travers v. Am. Cordage Co., C. D., 1895, 125; 70 O. G., 277; 64 Fed. Rep., 771.) This case, however, does not call for an expression of our opinion upon this point."

The Supreme Court did not approve the sustaining of such claims.

The first of the cases cited as examples was never appealed. The second case was reheard and the method claim was held invalid (58 Fed. Rep., 566). On appeal it was held invalid (74 O. G., 269).

The method claim of the third exemplar case was held invalid for not being for an art (Travers v. Gem Hammock Co., 75 O. G., 678).

In New v. Warren, *supra*, there was an apparatus which did operate a real art. Yet the functional claim was held invalid.

Below are a few cases wherein claims for a mechanical mode, or

for functions of a machine, or for mere mechanical or manipulatory treatment of material, were held not to be an art, and invalid:

McKay v. Jackman, 22 O. G., 85.
Sickle v. Falls, 2nd Fisher, 202.
Dederick v. Sigmund, 52 O. G., 1537.
Chicopee Folding Box Co. v. Rogers, 32 Fed. Rep., 685.
Travers v. Gem Hammock Co., 75 O. G., 678.
Union Paper Bag Co. v. Waterbury, 74 O. G., 259.
Wells Glass Co. v. Henderson, 72 O. G., 285.
Brainard v. Cramme, 22 O. G., 769.

Of decisions by Commissioners leading cases are:

Ex parte Blythe, 30 O. G., 1321.
Ex parte Herr, 41 O. G., 163.

Other Commissioners of different opinion on this subject have rendered directly opposed decisions. We regard them as overruled by the latest decisions of Commissioners and by the U. S. Supreme
81 Court in Steinmetz v. Allen, Commissioner.

In Gage v. Kellogg, 32 O. G., 381 (Cox, J.), it was said:—

"But irrespective of these considerations the inquiry is suggested with reference to the first claim of the reissue, Can there be in the same patent a claim for a machine and a claim for the process of using that machine? I have reached the conclusion that there cannot be with some hesitation, for the reason that the question has not been argued by counsel; and yet I am unable to understand how the complainant can avoid the rule enunciated in the following cases: McKay v. Jackman (12 Fed. Rep., 576); Brainard v. Cramme (*Id.*, 621); Goss v. Cameron (14 Fed. Rep., 576); Hatch v. Moffitt (15 Fed. Rep., 252); New v. Warren (22 O. G., 587); Corning v. Burden (15 How., 252)."

The courts in their desire to save inventions have construed mechanical mode claims to be claims for the exact machine which had that mode of operation.

Singer v. Walmsley, 1st Fish., 558.
Howe v. Newton, 1st Fish., 586.
Dederick v. Cassell, 20 O. G., 1233.
Goss v. Cameron, 23 O. G., 741.
Palmer v. Gatling Gun Co., 20 O. G., 815.
Smith & Egge v. Bridgeport Co., 55 O. G., 1149.

But the courts have not and will not sustain a mechanical mode claim to the extent of making it cover any other machine than that one in the patent whose mode of operation the claim expresses. In Singer v. Walmsley, *supra*, it was in effect, so said.

That the power which moves a machine is not the invention or a part of the invention of a patent, see Thomson-Houston Electric Co. v. Western Electric Co., 73 O. G., 1123. In that case a patent to the same inventor prior to his patent in suit had a claim reading:

1. The hereinbefore described art of automatically adjusting the collecting brushes of a dynamo-electric machine, consisting in making said adjustment directly dependent on the electrical condition of the commutator segments on leaving said collecting-brushes.

The claims of the patent in suit were machine claims. Held that the invention of the later patent was that of the prior patent and that the later patent was void. Of the case and concerning the action of the electrical forces, it was said:

"A general knowledge of electric dynamos and of their modes of operation is assumed. They have been elaborately explained both by the experts and by counsel with all the clearness possible probably for subjects so abstruse; but it is not deemed necessary
82 and, within reasonable limits, it would be impracticable to follow step by step the excursions which have been made into tangled fields, from which the judge below was constrained to confess that he came back more bewildered than enlightened. * * * In both constructions the lever, springs, armatures, magnets, brushes and dynamos are or may be the same; the electrical currents whether coming from one part of the machine or another, are alike, and, acting by one and the same law, they differ only in volume or energy. The magnetic current, it may be said here, as in Western Electric Co. v. Sperry Electric Co., (C. D., 1893, 573; 65 O. G., 597; 7 C. C. A., 164; 18 U. S. App., 177) is not in itself a part of the device or invention any more than a current of water is an element of a water-wheel. The invention is in the mechanism, not in the power which moves it, and once a device has been patented it is protected for all uses or functions of which it is found to be capable, whether anticipated by the patents or not."

The court illustrated that principle by a machine operated by water, and concluded that in the illustrative case—

"No new mode of operation is brought into play, and at most only improved and enlarged action is effected."

In the case cited in that decision it was said:

* * * "but the magnetic current itself is not a part of the device any more than is water an element of a water-wheel. In one case water is the power and in the other the electric current, and the devices are contrived for the purpose of controlling and applying the power. The invention is in the device, which may have one two, or more functions, real or supposed; and if the device is appropriated in its essential features it will be an infringement, notwithstanding some change in the location and relation of parts whereby a doubtful function of little comparative worth eliminated."

So a mechanical mode of operation is not a statutory invention and a claim for one is often declared invalid for that reason, and it is sustained, if at all, only by construing it to be a claim for the particular machine of the patent. It follows that such claims should not be allowed by the Patent Office, and that the Patent Office should require such claims to be cancelled and claims for the ma-

chine made, in order that the claims shall be what they must be in order to be held valid.

We will now apply the foregoing principles to the facts of the present case.

The specification and drawings present a brine-heating machine which has two chambers having common walls. Each chamber is provided with inlets and outlets for salt brine to be heated and for steam to heat the brine. The brine and steam are fed one
83 into one chamber and the other into the other chamber and both against the common walls of the chambers so that the heat of the steam in one chamber is conducted through the walls to heat the brine in the other chamber and the steam having so lost some of its heat is condensed into water which passes out of the machine.

So far, an art is disclosed, namely, the art of heating by using steam conductively. Although worked by this apparatus it is not claimed. It is therefore admitted to be old. Indeed it is of common use in many arts wherever any fluid, as air, gas, water, &c., is to be rarefied or condensed, or vaporized or liquified, or heated, or heated to vaporization, or heated to effect precipitation.

The two-chamber apparatus for using this art is not claimed and is also thereby admitted to be old. The apparatus is called variously a dryer, a cooler, a condenser, a vaporizer as the common tube boiler, and as, in ammonia ice-machines, either a vaporizer of liquid ammonia or as a restorer of vaporous ammonia to a liquid condition, or as a cooler of brine or water to make ice.

This two-chamber apparatus is common in every art where the temperature of fluids or even of granular substances is to be raised or lowered by the use of steam or any other suitable fluid agent. It is enough if the two fluids differ in temperature, and indeed the same fluid at different temperatures obviously may be and indeed is commonly used in the two chambers of this old apparatus.

On reading the specification of this application, confused though it be, it will appear that the applicant proposes to use other fluids to change temperature and also to use in the two chambers brines of differing temperatures.

So far we have in this application an old art and an old apparatus working the old art.

84 Another art disclosed in this application is the dissolving and washing, from the old heating plates of this old apparatus, the incrustations of calcium sulphate deposited on them from the salt brine during its subjection to the heat conducted to them by the plates of the old machine, by the application of wet steam to those deposits.

It is this process which the first of the method claims before us covers.

Although the claim is complicated and obscure and apparently incorrect, yet all there is of art in it is the direct application of wet steam to those so incrusted heating plates to dissolve and remove

those incrustations from them. All else in the claim is a recital of the results which necessarily follow when the wet steam is applied to those incrustations on the plates.

The useful result of the claimed process is attained when it has cleaned the plates; and all else is the action and results of the old steam heating process.

It is evident that this process, limited as it is in all of the method claims before us to the removal of incrustations of calcium sulphate, is usable to wash off those old heating plates wherever the deposits from the liquid under treatment are dissolvable by wet steam.

Claim 1 partially recognizes this fact by claiming the process unlimited by the particular liquid under treatment.

Claims 2 and 3 have the faults of claim 1. Claim 2 limits the heat to be used to steam heat and the liquid to be heated to brine. In so far, the claim covers a use of the art of claim 1 to clear the heating plates of the old apparatus of calcium sulphate when deposited from brine. To that is added in the claim the following: "the steam and brine being applied alternately to each side of the heat-conducting walls so that the heating of the brine and the removal of the incrustation from a previous heating proceed together, substantially as described."

85 In performing the process of claim one, the liquid which has been heated must be withdrawn from the chamber before the steam can be applied to the incrusted heating plate.

In performing that process according to the second claim the liquid which has been heated must be withdrawn from its heating chamber. But in this claim it is provided that the brine shall be withdrawn from its heating chamber and run into what was before the steam chamber and, conversely that the steam shall be withdrawn from its chamber and run into what was before the brine chamber, and that the work of the claimed process shall then be done on the other side of the plate, and so on, working on one side of the heating plate the process of claim one and when the plate is cleaned then working the old heating process, and then by the shifting of the fluids working on the other side of the heating plate first the claimed process and next the old heating process.

When the process of claim one is used by letting on steam to work an apparatus which has before been used until its heating plate has become incrusted, then the steam first cleans the plate and then heats the brine on the other side of the plates. All of the process that claim two covers is the mere use of the same process on the other side of the plate. It does not make a process to be a different process to use it in a different place in the same machine. So the process of this claim 2 is the same as that of claim 1.

The act of the transfer of the two fluids is a mere physical act performed by manipulating the machine so as to make it effect the transfer. It is no part of the art. It is the office of machines to put the substances whose forces are to be utilized into situations where they can act on each other. The concluding clause of this claim is

a mere recital of the functions or results of the acts of the machine. Remove those physical functions from this art claim and
86 there remains only a use in two places of the art of claim one.

Art claim No. 3 is the same as art claim No. 2 excepting that the brine in one chamber is to be boiling saturated brine and that the result of the heating of it is to be not merely heating or heating to evaporate and condense, but rather is to be heating to effect precipitation of salt.

Whatever be the condition of the liquid to be heated or the result of the heating, in each case the liquid to be heated is necessarily of lower temperature than that of the steam, and the process of washing off the plate by the steam and the subsequent continuance of the old steam heating process is the same.

The physical functions of the machine appear in this art claim No. 3 just as they do in art claim No. 2.

So the art of these three claims is merely the dissolution of incrustations of calcium sulphate on a heating plate by subjecting them to wet steam.

That the separation of the functions of a machine from a mixed functional and art claim is the proper treatment of a claim to determine what its real art is, see—

Ex parte Lowe, C. D., 1870, 39;

Ex parte Harrison, C. D., 1876, 170;

Crescent Brewing Co. v. Gottfried, 45 O. G., 944.

We now consider the machine claims. Each of them calls for a two-chamber machine.

Claim 4 rests upon the following description in the specification:—

"When, however, the heating of brine (with or without evaporation) in only one of the chambers may be desired, it suffices to provide the other chamber with an inlet and outlet for any cooling medium in addition to the steam supply pipe and the outlet for the condensed water, which latter outlet however, if desired, may be the same opening which serves for the withdrawal of the cooling medium."

Accordingly there is in this apparatus of this claim no means for reversal of the positions of the brine and the steam relatively
87 to the sides of the heating plate and there is an element additional to these needed to perform the claimed process, in one chamber, namely, an inlet and an outlet, or an inlet only, for a cooling medium into the steam chamber.

The specification does not state the function of this cooling agent.

Claims 5 and 6 clearly and concisely claim the apparatus. They are like claim 4 limited to brine apparatus. In claim 5 the means is to be operated to merely heat with or without evaporation and in claim 6 so as to effect precipitation of salt.

We have ascertained that the art claims do present a real art

which is the same in each of the claims, and that the machine claims do present a real machine.

The question for determination is whether these two inventions, presumptively distinct and independent inventions, are so related and dependent as to be one invention.

Several tests are available to determine whether inventions are or are not independent inventions. One is capability or incapability of separate novelty.

The Supreme Court in the Rubber Co. v. Goodyear, 9 Wall., 788, considered the machine and its produce invention and the art and its product invention.

The Supreme Court had to decide as to a process for making a product and the product of that process. In the inferior court a patent for the process was held invalid and no appeal had been taken from that decision. In the same court the product patent had been held valid. An appeal from that decision was before the Supreme Court. Counsel for the appellant argued thus: This process and product are in essence one invention. The patent for the process has been declared to be invalid for lack of novelty. The process being invalid, the product must be. The court said:

"Patentable subjects as defined by the patent law, (act of 1836, sec. 6), are 'any new and useful art, machine, manufacture,
88 or composition of matter, or any new and useful improvement on any art, machine, manufacture, or composition of matter.' A machine may be new, and the product or manufacture proceeding from it may be old. In that case the former would be patentable and the latter not. The machine may be substantially old and the product new. In that event the latter and not the former would be patentable. Both may be new, or both may be old. In the former case, both would be patentable; in the latter neither. The same remarks apply to processes and their results. Patentability may exist as to either, neither or both, according to the fact of novelty, or the opposite. The patentability, or the issuance of a patent as to one, in nowise affects the rights of the inventor or discoverer in respect to the other. They are wholly disconnected and independent facts. Such is the sound and necessary construction of the statute."

So the court considered these inventions as things regardless of how they were contrived, and determined their independence by the test of novelty. Being capable of separate novelty they were found to be independent inventions.

The same test applies to the art and the machine. Where if one be new the other must be new or where one is old the other must be old, there is but one invention and the machine is that invention; and the claims for the machine protect the inseparable process which is performed by the use of the machine.

Applying the test of novelty, it is clear from what has been already developed concerning the present invention that the machine may

be new and the art old or the art new and the machine old, and it follows that they are wholly disconnected and independent facts.

"Such is the sound and necessary construction of the statute."

Also it follows that they are not a unitary invention and must be claimed in separate applications.

Another test of independence or dependence is the capability or incapability of separate use. We will now apply that test to this case.

The machine of the machine claims is capable of use without use of the art. Its use does not necessarily or actually include the cleaning of any kind of deposits from its heating plates much
89 less incrustations of calcium sulphate deposited from salt-brine. As has hereinbefore been said of the old unclaimed machine to which this applicant has added a means for reversing the positions of the fluids relatively to the heating plate, so the use of the present machine as a gas, air, water, or other fluid heater or cooler, vaporizer, or condenser or precipitator, does not perform this art and usually would not wash off any kind of deposit. It is only when it is used to heat salt-brine or any other liquid which deposits calcium sulphate that this machine works this process.

So the machine being capable of use without thereby using the art, is an invention independent of the art and the two not being unitary may not be claimed together in one application.

The case of Cochrane v. Deener, 11 O. G., 687 cited by the Supreme Court in Steinmetz v. Allen as affording an example of an art independent of a machine used in performing the art, was a case of the kind before us. Therein the art was dependent on a generic machine of a certain kind for the performance of the very gist of the independent process, yet the machine was one which was usable for performing other processes. It was in fact a fanning mill usable for cleaning by separation any kind of grain or milled product. It was therefore usable independently of the process and was an independent invention. Indeed the particular machine illustrated in the process patent, and others therein referred to as usable in the process, had been claimed, for general use, in earlier patents.

So the machine was independent of the process and its independence determined that it and the process which it might be used to perform were not one unitary invention.

Here we might stop. But we also find that a two-chambered machine which is a feature of every machine claim before us, is not necessary to the performance of the art of these art claims.

That art may be performed in an open salt-evaporating
90 pan by emptying the pan of its brine from time to time and applying wet steam to the incrustations of calcium sulphate on the upper side of its bottom, the heating surface of the pan, to dissolve and remove this incrustation. That pan need not be heated by steam. It may be heated by flame.

So the art of these art claims is independent of the machine of these machine claims.

These two inventions being each independent of the other and not being a unitary invention, must under the statute requiring that the invention of a patent shall be unitary, be claimed in separate applications.

The applicant lays stress on the continuity of the operation of his art. It is the duty of a machine to effect that purpose by applying natural agents to their place of use and to do that continuously. It does not make an old art to be a new one by making it continuous by use of a machine.

The decision of the examiner requiring a division of these claims for an art and for an independent machine used to perform the art, is affirmed.

S. W. STOCKING,
J. H. BRICKENSTEIN,
Examiners-in-Chief.

I am of the opinion that the application discloses only an invention.

If the first three claims do not relate to a legitimate process, they should be rejected for that reason. The remaining claims (4, 5 and 6) cover an apparatus including chambers provided with certain specific supply and discharge conduits which limit its capabilities. The apparatus could not, as the examiner alleges, be used as a beer cooler or a water still unless other sources of supply were substituted for those which are disclosed and claimed, and said apparatus,
91 if it were operated in the manner described, and as it is intended to operate, would automatically execute the alleged process.

The examiner should examine the case on its merits and reject the first three claims if, in his opinion, they cover no more than the functions of the specific apparatus.

A division should not be required.

T. G. STEWARD,
Examiner-in-Chief.

92 Serial No. 736,843, Paper No. 1.

820 Received May 12, 1905. H. Chief Clerk, U. S. Patent Office.

Herman Frasch. Means for Removing Incrustation of Calcium Sulphate from Brine-heating Surfaces. Filed November 13, 1899. No. 736,843.

WASHINGTON, D. C., *May* 12, 1905.

Hon. Commissioner of Patents.

SIR: Appeal is hereby taken to the Commissioner in person from the decision of the examiners-in-chief of July 19, last, in the matter of the above entitled application.

The following are assigned as reasons of appeal:

First. The examiners-in-chief in making their said decision neces-

sarily found the existence of a statute of the United States authorizing the grant of two separate exclusive rights for applicant's process and apparatus, respectively. Such a statute is invalid; because beyond the power of Congress to enact under the Constitution.

Second. The authority exercised under the United States by the examiners-in-chief in rendering their said decision is invalid. In claiming his process and his apparatus in the same application, applicant is merely doing what is directed by sections 4888 and 4920 of the Revised Statutes. The said decision is not merely erroneous; it is without authority of law.

Third. The authority of rule 41, cited by the examiners-in-chief as governing their said decision, is invalid, because said rule is not only inconsistent with law, but also is an attempt to amend an act of Congress.

93 Fourth. The examiners-in-chief erroneously hold that process and apparatus must always be claimed in separate applications; since in their erroneous view a claimable process and a claimable apparatus inevitably lack that unitary character which under the examiners-in-chief's erroneous construction of the statute would be necessary to the joinder of claims to such process and apparatus, respectively, in the same application. The holding of the examiners-in-chief is contrary to the opinion of the Supreme Court U.S.in United States v. Allen, 109 O. G., 549, and in *Ex parte* Frasch, 109 O. G., 554.

Fifth. The examiners-in-chief erred in enforcing a practice condemned by the Court of Appeals, D. C., and the circuit court, U. S., for the southern district of New York, namely, the unnecessary "multiplication of * * * patents" (*In re* Freeman, 109 O. G., 1339, column 2 of 1340) "the multiplication of applications and patents for devices so closely related to each other, when they can properly be included in one application and in one patent" (Norden v. Spaulding, 114 O. G., 1828, bottom of column 1 and top of column 2 of 1829) "this novel method of manifolding an invention * * * in order to * * * take out * * * separate patents—one for the process, one for the machine * * *" (*Ex parte* Blythe, C. D., 1885, 82; *Ex parte* Herr, C. D., 1887, 105)." (Underwood v. Guber, C. D., 1889, 519, 521.)

The examiners-in-chief, in justification of their erroneous decision, cite the Blythe and Herr cases which were thus disapproved and which were expressly overruled in *Ex parte* Young, C. D., 1885, 108, *Ex parte* Lord, C. D., 1890, 16, respectively.

Sixth. The examiners-in-chief erred in the law governing the joinder of process claims and apparatus claims in the same application.

94 A. They erroneously hold that a requirement of division is not "always error when required of any art and apparatus, if they be related and dependent inventions" (page 4 of original typewritten copy of decision).

The Supreme Court, U. S., in United States v. Allen, 109 O. G.,

549, and in *Ex parte* Frasch, 109 O. G., 554, has declared the contrary.

B. They erroneously hold that in United States v. Allen, 109 O. G., 549, no test is designated for determining the character of the dependence of process and apparatus which gives to the inventor thereof the right to present his process claims and his apparatus claims in the same application. On the contrary, the court designated connection in design and operation as the test, which it also illustrated by examples.

C. They erroneously hold that "oneness of basic idea in two statutory inventions is not to be regarded as establishing the oneness of the two inventions" (top of page 11 of original typewritten copy of decision). On the contrary, when a process and an apparatus are the material reflexes and embodiments of the same "mental result" (Smith v. Nichols, 21 Wallace, 112), they are clearly connected in their design and operation.

D. They erroneously hold that "capability or incapability of separate novelty" (middle of page 23 of original typewrttten copy of decision) is a proper test for determining the question of division; for while incapability of separate novelty would furnish abundant evidence of connection in design and operation and consequently of an applicant's right to join the claims: yet capability of separate novelty would not show a complete independency and consequently would not justify a requirement of division. Sections 4903, 4909, 4915, 4916, 4917, 4920, 4922 and 4923 Revised Statutes all recognize capability of separate novelty in claims in the same application or patent and in parts of the subject-matter so applied for or patented.

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E. They erroneously hold that "another test of independence or dependence is the capability or incapability of separate use" (bottom of page 24 of original typewritten copy of decision). Incapability of separate use would furnish abundant evidence of connection in design and operation and consequently of an applicant's right to join the claims; yet capability of separate use would not establish complete independency and consequently would not justify a requirement of division. Sections 4903, 4909, 4915, 4916, 4917, 4920, 4922 and 4923 Revised Statutes, in recognizing a capability of separate novelty in claims of the same application or patent and in parts of the subject-matter so applied for or patented, necessarily recognize also a capability of separate use; since the reference which would anticipate one claim only or one part only would necessarily exhibit it as used separately. An inventor is entitled to all the uses of every part protected by appropriate claim.

F. They erroneously hold with respect to process and apparatus that "where if one be new the other must be new or where if one be old the other must be old, there is but one invention and the machine is that invention." Neilson's process and apparatus (Tilghman v. Proctor, C. D., 1881, 163, bottom of 174 and top of 175), Hoyt's process and apparatus (Hoyt v. Horne, C. D., 1892,

435), Jones' process and apparatus (Carnegie v. Cambria, C. D., 1902, 592, bottom of 608 and top of 609) and applicant's process and apparatus here in issue are illustrations to the contrary. So also is Bell's telephone (C. D., 1888, 322).

96 G. They erroneously ignore the fact that the option to demand one patent or two is the property of the inventor and not of the Patent Office, if separate patents should, indeed, be permissible for process and apparatus in all cases. If applicant ask for one patent only, the Patent Office must respect the right which the statute gives "to join inventions in one application in cases where the inventions are related" (United States v. Allen, 109 O. G., 549, column 2 of 552).

Seventh. The examiners-in-chief erred in respect to the things whose character as "related and dependent," on the one hand, or as "completely independent," on the other, is to be determined.

A. They erroneously confuse the "invention," of which and of the manner of making and using the same section 4888, R. S., requires a "written description," with such "part, improvement or combination" as the inventor must "particularly point out" if he wishes protection therefor. The described inventions are to be compared, not the claims apart from the procedure and structure on which the claims are based.

B. They erroneously assume a liberty to compare selected portions only of the disclosed procedure and the disclosed structure, respectively, instead of comparing the entire procedure which exhibits the process in its best mode with the entire structure, which exhibits the apparatus in its best mode.

C. They would erroneously separate an invention from the manner of making and using it, required by law to be disclosed in the same "written description."

D. They erroneously assume the liberty to devise new and, in fact, inoperative or useless arrangements, in order to establish a lack of that unity which they erroneously hold to be essen-

97 tial and which they erroneously deny to applicant's process and apparatus, if it should be essential.

Eighth. The examiners-in-chief erred in respect to applicant's process.

A. They erroneously hold that said process "may be performed in an open salt-evaporating pan by emptying the pan of its brine from time to time and applying wet steam to the incrustation of calcium sulphate on the upper side of its bottom, the heating side of the pan, to dissolve and remove this incrustation. That pan need not be heated by steam. It may be heated by flame." On the contrary, applicant professes nothing with respect to the removal of incrustations from flame heated surfaces (the chemico-physical characteristics of such incrustation being regarded as unlike that which deposits on steam heated surfaces). Neither does he profess anything with respect to the removal of incrustation of any kind by a jet of open steam applied thereto. His removal of incrustation by

a body of confined steam in contact therewith depends upon the heat of said steam being conducted through an intervening wall in order to condense the same in contact with the incrustation; and in order to obtain additional advantage from the operation, the heat must be imparted to a body of fluid of lower temperature capable of utilizing the so conducted heat. It is further advantageous for this fluid to be *brine* (as specified in claims 2 and 3), and in the 'best mode" it is *boiling saturated brine* (as specified in claim 3). The whole is exhibited in this best mode as one inseparable procedure, as Wright's spring devices were exhibited in one inseparable structure (Miller v. Eagle, C. D., 1894, 147).

B. They erroneously treat the removal of calcium sulphate in applicant's process as "another art" (top of page 19 of original
98 typewritten copy of decision) wholly independent both of "the art of heating by using steam conductively" (page 18 of original typewritten copy of decision) in general and also the art of so heating brine in particular, which latter art is carried on in a two-chambered heat exchanger where "brine and steam are fed one into one chamber and the other into the other chamber and both against the common walls of the chambers so that the heat of the steam in one chamber is conducted through the walls to heat the brine in the other chamber and the steam having so lost some of its heat is condensed into water which passes out of the machine" (top of page 18 of original printed copy of decision). On the contrary, in every form of applicant's process conductive heating is of necessity performed concurrently with incrustation removal; both operations are performed necessarily by one and the same body of steam. "A double effect is produced or a double duty performed" (Reckendorfer v. Faber, C. D., 1876, 430, 437). Moreover, in every form of applicant's process, the heating of brine in particular by using steam conductively must be performed in order to have a removable incrustation of calcium sulphate. When brine in particular is heated conductively by steam, which is removing calcium sulphate, said steam produces a triple effect, that is to say, (1) it heats the brine on the opposite side of the heat-conducting wall; (2) it removes the calcium sulphate with which it is in contact, and (3) it causes a new incrustation of calcium sulphate to form on the then brine side of the heat-conducting wall.

C. They erroneously hold that the clause which reads "the steam and brine being applied alternately to each side of the heat-conducting walls so that the heating of the brine and the removal of the incrustation from a previous heating proceed together"
99 (applicant's claim 2) "is a mere recital of the functions or results of the acts of the machine" (page 21 of original typewritten copy of decision). On the contrary, it merely amplifies what is necessarily included in the removal of steam deposited calcium sulphate by means of steam which is heating brine conductively; since such removal cannot occur without the presence of the brine and steam alternately on each side of a heat-conducting wall.

Ninth. The examiners-in-chief erred in respect to applicant's apparatus.

A. They erroneously treat the steam and brine connections of applicant's reversible two-chambered heat exchanger as no part of applicant's apparatus. Electricity is no part of an electric wire; water is no part of a water wheel; steam is no part of a steam pipe; and brine is no part of a brine conduit; but an electric wire nevertheless, is not a fence wire; a water wheel is not a steam turbine; and the "steam supply pipe" and "brine supply conduit" of applicant's claims 4, 5 and 6 are neither of them a beer supply pipe or a water supply pipe or an ammonia supply pipe; as the examiners-in-chief erroneously hold them to be.

B. They erroneously hold that the patentable usefulness of applicant's reversible two-chambered heat exchanger exists apart from steam and brine connections. If these were omitted from the apparatus claimed it would be necessary to read them in "with a view of showing the connection in which a device is used, and proving that it is an operative device" (McCarty v. L. V. R. R. Co., C. D., 1895, 725).

100 The examiner at first said that applicant's reversible two-chambered heat exchanger "is equally as useful for a beer cooler or a water still" (page 4 of original typewritten copy of examiner's answer of April 4, 1904). But, in answer to applicant's inquiry of April 9, 1904, this statement he modified (April 13, 1904) so as to say that it was "also applicable," but "as to what advantages follow in the above cases, the examiner declines to state, although several suggest themselves; as he has no desire to anticipate any use in that line that others may care to employ. Moreover, it is immaterial whether there be any advantages over the art in those classes." (Page 2 of original typewritten copy of examiner's answer of April 13, 1904). If applicant had said, I modify a two-chambered heat exchanger thus and so, but I decline to say what or whether any advantage is obtained over the art in any class, would such a written description comply with the act of Congress and disclose a patentably useful thing? In a beer cooler or water still the reversible feature would be merely superfluous; it would not be *used* (utilized). It is incapable of *use* (utilization) in that connection.

C. They erroneously hold that in claim 4 there is "no means for reversal of the positions of the brine and the steam relatively to the sides of the heating plate" (bottom of page 22 of original typewritten copy of decision). The claim specifies means for reversing the position of the steam relatively to the heat-conducting wall in providing a "steam supply pipe" for each of the two chambers. If brine should be the cooling medium of the claim, the claim specifies means for reversing its position also.

D. They erroneously hold that in claim 4 "there is an element additional to those needed to perform the claimed process, in one chamber, namely an inlet and an outlet, or an inlet only for a cool-

ing medium " (bottom of page 22 of original typewritten copy
101 of decision). Said cooling medium inlet (or inlet and outlet) is, in fact, needed for the process; because, while the steam is held in contact with the incrustation on one side of the heat-conducting wall, there must be held against its opposite side a fluid of lower temperature (cooling medium) to receive the heat necessarily conducted through said wall in order to condense the steam in contact with the incrustation.

Tenth. The examiners-in-chief erred in holding that applicant's apparatus and process " must under the statute requiring that the invention of a patent shall be unitary, be claimed in separate applications " (page 26 of original typewritten copy of decision).

A. Erroneously holding that the statute does not allow the joinder of claims to " any art and apparatus, if they *he* related and dependent inventions " (page 4 of original typewritten copy of decision), they are understood practically to admit that applicant's process and apparatus are " related and dependent." Whether such admission be intended or not, relationship and dependency exist and it was consequently error to require separate applications.

B. Erroneously excluding or ignoring the test of connection in design and operation, they are understood practically to concede such connection. Whether they do or do not concede it, it exists; and consequently it was error to require separate applications.

C. Erroneously excluding or ignoring the opinion of the Supreme Court, U. S., that " the art described and the means of making it useful " (United States v. Allen, 109 O. G., 549, column 1 of
102 page 552) may rightfully be claimed in the same application, they are understood practically to admit that the apparatus disclosed by applicant does constitute the means of making useful the art described by him. Whether they do or do not admit this, it is so in fact; and consequently it was error to require separate applications.

D. Erroneously holding that joinder is precluded even when the process and apparatus " are to such an extent inseparable that the existence of some one of them is dependent on that of the " (United States v. Allen, 109 O. G., 549, column 1 of — 552) other, they are understood practically to concede that applicant's process and apparatus are to that extent inseparable. Whether they do or not concede it, such inseparability exists, and consequently it was error to require separate applications.

E. Erroneously excluding or ignoring the illustrations afforded by The Telephone Cases (C. D., 1888, 322); Merrill v. Yeomans (C. D., 1877, 279); Silsby v. Foote (20 Howard, 378); American Cotton Tie Co. v. Simmons (C. D., 1882, 507) and Hoyt v. Horne (C. D., 1892, 435), they are understood practically to concede that applicant's process and apparatus should be joined under those precedents and each of them. Whether they do or do not so concede, these precedents justify joinder; and it was consequently error to require separate applications.

F. Erroneously excluding or ignoring the opinion of the circuit court in New v. Warren that "the description on which it was founded was in the original, and the process, if patentable at all, might have been claimed there; * * *" (C. D., 1882, top of page 373), which opinion was substantially approved in United States v. Allen, when they recognize the embarrassment and peril of rights which might be caused by an applicant's "disclos-
103 ing the apparatus in his application for the process" (109 O. G., column 2 of page 552) without also claiming it therein, the examiners-in-chief are understood practically to admit that the description of applicant's process and apparatus are both of them properly and, indeed, necessarily included in his specification. Whether they do or do not so admit, both are, in fact, properly and, indeed, necessarily included therein; and it was consequently error to require separate applications.

G. Erroneously excluding the sufficiency for joinder of "oneness of basic idea," they are understood practically to admit that applicant's process and apparatus are reflexes and embodiments of the same conception of industrial improvement. Whether they do or do not admit it, applicant's process and apparatus are reflexes and embodiments of the same "basic idea;" and consequently it was error to require separate applications.

H. Erroneously asserting the test of "capability or incapability of separate novelty" (middle of page 23 of original typewritten copy of decision), they hold, erroneously also, that applicant's process and apparatus do not meet it. Even if they had not met it, it was error to require separate applications; because the test of division is not as stated by them.

I. Erroneously asserting the test of "capability or incapability of separate use" (bottom of page 24 of original typewritten copy of decision), they hold, erroneously also, that applicant's process and apparatus do not meet it. To make out a case, they propose a structure devised by themselves which consists of an open salt pan, heated by flame and provided with a steam pipe for directing a jet of open steam against "the upper side of its bottom" and which is,
104 in fact, inoperative or useless and, if operative, would fail to perform applicant's process in any form. They also propose a procedure which consists in cooling or heating non-incrusting fluids by conduction of heat through an intervening heat-conducting wall, and which could not possibly make use of the steam supply pipes and brine supply conduits of applicant's apparatus as such. If said pipes and conduits could be regarded as pipes or conduits appropriated wholly to non-incrusting fluids, the so obtained reversible heat exchanger would have no patentable utility; sinse its reversibility would be superfluous and without any beneficial effect (certainly without any beneficial effect of applicant's discovery) on any operation. Even, however, if applicant's processand apparatus were capable of separate use, in the manner stated by the examiners-

in-chief or otherwise, it was error to require separate applications; since capacity for separate use is not the test for requiring division.

Eleventh. The examiners-in-chief erred in holding applicant's process and apparatus to be "each independent of the other" (page 26 of original typewritten copy of decision) whereas, they are "related and dependent," being "connected in their design and operation."

Twelfth. The examiners-in-chief erred in holding in reference to the continuous performance of applicant's process that "it is the duty of a machine to effect that purpose by applying natural agents to their place of use and to do that continuously. It does not make an old art to be a new one by making it continuous by use of a machine." (Bottom of page 26 of original typewritten copy of decision.)

105 A. Applicant's machine only works his process continuously when the valves are shifted at intervals and this shifting may be (and as shown is to be) done by hand, not mechanically.

B. A machine can only be conceived for "applying natural agents to their place of use" for continuous operation, after one discovers not only the chemical and other elemental actions to be performed, but also discovers how the acts or operations which bring such actions into play can be combined in a continuous manner. The act of transfer, whether itself a process element or not, is useless in the absence of the chemical and other elemental actions which take place before and after the transfer and which involve action after transfer upon incrustation deposited before the transfer is made.

C. A continuous process is patentable, as such, when new, even when an intermittent but otherwise similar process may be old. Here there is no prior process of any kind of like nature with applicant's and no prior apparatus which could be used (without additions) to perform it. His process and his apparatus are both pioneers.

Thirteenth. The examiners-in-chief erred in affirming the "decision of the examiner requiring a division of these claims for an art and for * * * machine used to perform the art" (end of decision). The statute gives applicant the right to make both sets of claims in this one application.

106 It is to be noted that the examiner's decision was affirmed by a divided board, one of the examiners-in-chief dissenting and holding that "a division should not be required."

Appellant desires to be heard orally before the Commissioner in person.

Find herewith appeal fee of $20.00.

Respectfully,

HERMAN FRASCH,
By CHAS. J. HEDRICK,
His Attorney.

107 May 24, 1905. S. E. T.

Serial No. 736,843, Paper No. 4.

Comm'r's Decision.

Recorded, Vol. 83, page 146.

United States Patent Office.

Ex Parte Herman Frasch. Means for Removing Incrustation of Calcium Sulphate from Brine Heating Surfaces.

Appeal from Examiners-in-chief.

Application filed November 13, 1899, No. 736,843.

Mr. Charles J. Hedrick for appellant.

This in an appeal from the decision of the examiners-in-chief affirming the action of the primary examiner requiring division between the process and apparatus claims.

The appeal is based upon eleven different grounds, including, among other things, the allegations that this office is without statutory authority to enforce division between process and apparatus, and that statutory authority for such requirement, if it existed, would be unconstitutional. The authority and propriety of the practice of requiring division between inventions, found to be independent, is too well settled to require rediscussion here. It is sufficient to state that nothing is found in the decision of the Supreme Court of the United States in the case Steinmetz v. Allen, Commissioner of Patents, 109 O. G., 549, relied upon by the applicant, to make inventions of processes and apparatus any exception to this practice. The only question which it is necessary to decide in passing upon this appeal is that of the dependence or independence of the alleged invention set forth in the claims of the application.

108 Claims 1, 2 and 3 are each entitled "The process of removing incrustations of calcium sulphate from heating surfaces." The process as defined in claim 1 consists in the single step of condensing steam in contact with the incrusted surfaces of heat conducting walls by carrying off heat from the opposite side of the wall. Claims 4, 5 and 6 are limited to an apparatus which may be used in carrying out the alleged process of claim 1. It is very clear, however, that the process may be performed without using the particular apparatus disclosed and that the particular apparatus may be used without performing the process. Neither, therefore, depends upon the other.

The appellant has discovered that incrustation may be removed by condensing steam upon it, and this idea is the basis for his pro-

cess claims. He has also devised convenient means for performing his process, and such means constitutes the basis for his apparatus claims. The two things are separate and independent, both in conception and in execution. The process which consists in condensing steam upon an incrusted surface and apparatus which consists of two chambers separated by a heat conducting partition, and provided with certain inlets and outlets, have so little in common and there is such an utter absence of necessary relationship between them, that it is difficult to see upon what theory they could be regarded as one invention or as dependent inventions.

The relationship of claims 2 and 3 to the remaining claims in this case also becomes apparent upon comparison of the limitations of these claims with the functions of the apparatus which the specification discloses. The purpose of this apparatus, as set forth by the applicant, is to permit the heating of brine, in the process of recovering common salt from solution by distillation, without prolonged interruption of the process for the removal of incrustations of
109 calcium sulphate which are deposited from the brine upon the heating surfaces. Brine is heated in one chamber of the device by the condensation of steam in the adjacent chamber. After the proper interval, the chambers are discharged and recharged, and in recharging, brine is supplied to the chamber which before contained steam, and steam is supplied to the chamber which before contained brine. The charges are alternated in this manner from time to time, so that while brine is being heated in one chamber, condensing steam in the adjacent chamber is removing incrustation deposited there by the preceding brine heating operation.

Claims 2 and 3 include the limitations of claim 1, but they are further limited by the statements that the heat from the condensing steam is supplied to brine upon the opposite side of the incrusted heat conducting wall, and that steam and brine are applied alternately to each side of this wall, so that the heating of the brine and the removal of the incrustation from a previous heating proceed together. They state where and when the process of removing incrustations by the condensation of steam thereon is applied in the operation of specific apparatus. It may well be doubted if the limitations to the use of a particular apparatus can be considered proper steps of a process, but that matter is not presented by this appeal. For the purpose of determining the question of division, the claims must be taken as they read. If they contain limitations, whether proper or improper, which make the alleged process claims indivisible from the apparatus claims, division can not be required. Claims 2 and 3 do contain such limitations and, therefore, the requirement for division should not be insisted upon as to them. A mere mode of operating apparatus can not be regarded as so unrelated to the apparatus itself that division can be required between claims
110 to processes which amount to mere statements of the former and claims to the latter; the distinct and independent in-

ventions upon which requirements for division must rest are lacking.

It is apparent that in many cases the question of division between process and apparatus claims will be simplified by consideration of the question whether the process claims cover the mere function or operation of the apparatus. If they do cover the mere function or operation of the apparatus disclosed and claimed, they should be rejected as not covering proper processes and division should not be required.

The decision of the examiners-in-chief requiring that claims 1, 2 and 3 be divided from claims 4, 5 and 6 is affirmed as to claim 1, and reversed as to claims 2 and 3.

F. I. ALLEN,
Commissioner.

July 12, 1905.

111 Paper No. 6.

Herman Frasch. Means for Removing Incrustation of Calcium Sulphate from Brine-heating Surfaces. Filed November 13, 1899. No. 736,843.

Before the Commissioner in Person.

WASHINGTON, D. C., *July* 26, 1905.

Hon. Commissioner of Patents.

SIR: In response to the decision of July 12, instant, the following requests are made; and it is prayed that they may be passed upon within thirty five days (excluding Sundays and holidays) from said July 12, or else that the proceeding herein be suspended pending the determination of said requests (rule 123; Ross v. Loewer, C. D., 1896, 665; section 4912 R. S.):

I.

A rehearing is requested for each of the following reasons:

First. For manifest error of law in the finding that a valid statute exists which requires, directs or allows two exclusive rights, one in the process of applicant's claim 1 and another in the process and apparatus of his claims 2, 3, 4, 5 and 6, substantially as the same are, respectively, described in applicant's specification.

Second. For manifest error of law in finding authority in the Commissioner of Patents to require division of claims for matters which the statute requires to be joined in the descriptive portions of the specification.

Third. For manifest error of law in finding authority in the Commissioner of Patents to require division between applicant's claim 1 and his claims 2, 3, 4, 5 and 6.

Fourth. For manifest error of law in the holding that
112 where a "process may be performed without using the particular apparatus" it is necessarily independent of said apparatus and that where a "particular apparatus may be used without performing the process" it is necessarily independent of said process; because such holdings confound *capacity* for separate use with *lack of connection* in design and operation." (United States v. Allen, 109 O. G., 549.) Two things designed to operate in connection with each other, and even necessarily so operating, if a certain result is to be attained, might be capable of use, one or other, or even each of them, separately. Howe's eye pointed needle and his shuttle were connected in their design and operation, in order to form a lock stitch; Gibbs invented a mode of using Howe's eye pointed needle without his shuttle in order to form a chain stitch.

In the Bell telephone patent, the process of conveying sounds telegraphically was shown as useful by a magneto apparatus; but Berliner subsequently practiced the same process without using any magneto apparatus. The court said that Bell's "patent is both for the magneto and variable resistance *methods* and for the particular magneto apparatus which is described or its equivalent. There is no patent for any variable resistance apparatus." (C. D., 1888, 322, 329.) Yet in United States v. Allen the court cites the telephone as a proper case of joining process and apparatus claims.

Fifth. For manifest error of law in requiring claim 1 to be divided from claims 2 and 3 when (as the decision asserts) "claims 2 and 3 include the limitations of claim 1."

Sixth. For manifest error of law in holding that claim 1 is not properly claimable in the same application with claims 2, 3, 4, 5 and 6, or with any of them. If it should be claimable with any and not with all, the decision should give to applicant the option
113 of claiming it with such claims as may be held properly to be joined together, in case he should elect to erase other claims.

Seventh. For manifest error of fact in holding that the "process of claim 1 * * * may be performed without using the particular apparatus disclosed."

Eighth. For manifest error of fact in holding that "the particular apparatus may be used without performing the process."

Ninth. For manifest error of law or fact, or both, in the holding that claims 2 and 3 "state where and when the process of removing incrustations by the condensation of steam thereon is applied in the operation of specific apparatus."

Claim 1, as well as claims 2 and 3, includes "the heat-conducting walls" and these do not constitute a "specific apparatus," but, in fact, perform an elemental action, to wit, the conduction of heat.

To perform the process as stated in claims 2 and 3 such walls are and must be, combined with means whereby the steam and brine can be made to swap places on each side of said walls; but claim 1 requires such steam-and-brine-swapping means for at least one side

of such walls, inasmuch as the steam and the incrusting fluid (brine) must follow each other on the same side of the heat-conducting walls, in order that the steam may remove incrustation left by the incrusting fluid; and claim 1 also requires means for applying heating and cooling mediums (most advantageously steam and brine) in alternation to the opposite side of said walls, inasmuch as without conduction of heat to the brine no "incrustations of calcalcium sulphate" will be formed on "heat-conducting walls;" and without a subsequent application of cooling medium to "the
114 opposite side of the heat-conducting walls" the heat of the steam will not be carried off so as to condense it in contact with the incrustation in such manner as to remove the same.

The laws of nature, not the statements of claims 1, 2 and 3, limit the essential instrumentalities by whose mechanical assistance the elemental actions of the steam, the brine, the calcium sulphate, and the intervening solid conducting material are enabled to work out the desired result.

Tenth. For manifest error of law or fact, or both, in requiring claim 1 to be divided from claims 2 and 3.

Eleventh. For manifest error of law or fact, or both, in requiring claim 1 to be divided from claims 4, 5 and 6.

II.

If a rehearing should not be granted, explanation is asked as to each of the following matters:

First. Please state in what manner and with what useful result (if any) it is held that applicant's "process may be performed without using the particular apparatus disclosed."

Second. Please state in what manner and with what useful result (if any) it is held that his "apparatus may be used without performing the process."

Third. Please state in what manner (if at all) the limitation in claim 2 with reference to the steam's "transferring its heat to brine of lower temperature on the opposite side of the heat-conducting walls and so carrying off the heat" and the corresponding limitation in claim 3 are regarded as stating "where and when the process of removing incrustations by condensation of steam thereon is applied in the operation of specific apparatus;" in other words, explanation is asked as to how (if at all) said limitations are
115 held to be "limitations to the use of a particular apparatus."

Claim 1 contains a limitation to "carrying off the heat from the opposite side of the heat-conducting walls."

Claim 1 implies a cooling medium for conductively condensing the steam (brine being described in the specification as the most advantageous medium) and claims 2 and 3 are limited to brine or its equivalent as such medium. The use of brine as a cooling medium is understood to be an element of process, not of apparatus; although, of course, brine-supplying means in particular (as distinguished from cooling medium supplying means in general) would be needed.

Fourth. Please state in what manner (if at all) the limitation in claims 2 and 3 to "the steam and brine being applied alternately to each side of said heat-conducting walls" is regarded as stating "where and when the process of removing incrustations by condensation of steam thereon is applied in the operation of specific apparatus."

In other words, explanation is asked as to how (if at all) the application of steam and brine alternately to each side of heat-conducting walls is held to constitute a limitation "to the use of a particular apparatus."

An application of steam, in order that it may perform an elemental action, is understood to be a process, not an apparatus, element; and an application of brine, in order that it may perform an elemental action, is understood also to be a process, not an apparatus, element. Their successive (alternate) application is an order of steps which is likewise understood to be a process, and not an
116 apparatus, element. In Cochrane v. Deener, the Supreme Court U. S. declared that a "process requires that certain things should be done with certain substances and in a certain order; but the tools to be used in doing this may be of secondary consequence." (C. D., 1877, 242, 248.)

To apply steam and brine alternately to each side of the heat-conducting walls is to do certain things with certain substances (to wit, brine, steam and solid conducting material) in a certain order. The tools for applying the steam and brine alternately to each side of heat-conducting walls are not specified in terms in claims 2 and 3 and are not implied further than that they should be competent for the purpose.

Respectfully submitted,

HERMAN FRASCH,
By CHAS. J. HEDRICK,
His Attorney.

No good reason appears why rehearing should be had of the appeal in this case, nor why any further explanation should be made of the matters discussed in my decision of July 12, 1905.

The petition for rehearing and the alternative request for further explanation are accordingly denied.

F. I. ALLEN,
Commissioner.

August 3, 1905.

Recorded, vol. 83, page 178.

[Endorsed:] Docket clerk, U. S. Patent Office, Jul- 26, 1905.

117-126 In the United States Patent Office.

In re Application of Herman Frasch, Serial No. 736,843, Filed November 13, 1899, for Improvement in Means for Removing Incrustation of Calcium Sulphate from Brine-heating Surfaces.

WASHINGTON, D. C., *Aug.* 28, 1905.

To the Commissioner of Patents.

SIR: You are hereby notified of my appeal to the Court of Appeals of the District of Columbia from your decision rendered on or about the twelfth day of July, 1905, rejecting my application and refusing me a patent for the invention set forth therein.

The following are assigned as reasons of appeal.

* * * * * * *

127 Respectfully,

HERMAN FRASCH,
By CHAS. J. HEDRICK,
His Attorney.

[Endorsed:] 173,969/05. 186,124/05. Docket clerk, U. S. Patent Office, Aug. 28, 1905. U. S. Patent Office. Copy made Oct. 4, 1905.

128 In the Court of Appeals, District of Columbia.

In the Matter of the Application of Herman Frasch. No. 323, Patent Appeal Docket.

It is stipulated by the Commissioner of Patents and the appellant (Herman Frasch) that in printing the transcript the clerk omit the reasons of appeal, being the last fifteen lines of page 117 and all of pages 118 to 126, both inclusive, and page 127 down to and not including signature, said reasons of appeal being printed in the petition of appeal to this court, *ante*.

JOHN M. COIT,
Counsel for Com'r Patents.
CHAS. J. HEDRICK,
Counsel for Herman Frasch.

(Indorsed:) No. 323, patent appeals. In the matter of the application of Herman Frasch. Stipulation of counsel as to printing record. Court of Appeals, District of Columbia. Filed Oct. 13, 1905. Henry W. Hodges, clerk.

Endorsed on cover: Commissioner of Patents. No. 323, patent appeal docket. In the matter of the application of Herman Frasch. Court of Appeals, District of Columbia. Filed Oct. 7, 1905. Henry W. Hodges, clerk.

TUESDAY, *January 9th, A. D.* 1906.

In the Matter of the Application of HERMAN FRASCH. No. 323, Patent Appeals.

The argument in the above entitled cause was commenced by Mr. C. J. Hedrick, attorney for the appellant, and was continued by Mr. J. M. Coit, attorney for the Commissioner of Patents.

WEDNESDAY, *January 10th, A. D.* 1906.

In the Matter of the Application of HERMAN FRASCH. No. 323, Patent Appeals.

The argument in the above entitled cause was continued by Mr. J. M. Coit, attorney for the Commissioner of Patents, and was concluded by Mr. C. J. Hedrick, attorney for the appellant.

In the Matter of the Application of HERMAN FRASCH. Patent Appeal, No. 323.

Opinion.

(Mr. Justice DUELL delivered the opinion of the Court:)

From the requirement of the Commissioner of Patents that appellant divide out of an application for patent, filed November 13, 1899, claim one for a process, this appeal has been taken

The subject matter of the invention is stated to be for improvements in Means for Removing the Incrustation of Calcium Sulphate from Brine-heating surfaces. The application was filed with six claims, the first three being process claims and the others for the apparatus.

Patent Office Rule 41, at the time when the application was filed, did not permit the joinder of claims for process and apparatus in one and the same application. The Examiner, following the rule, required division between the process and apparatus claims, and refused to act upon the merits. An appeal was taken to the Examiners-in-chief but the Examiner refused to forward it. Thereupon a petition was filed asking the Commissioner of Patents to direct that the appeal be heard. The Commissioner held that the Examiner was right in refusing to forward the appeal. From this refusal an appeal was taken to this Court which held that it did not have jurisdiction to entertain the appeal. Appellant then filed a petition in the Supreme Court for a mandamus directing this Court to hear and determine the appeal. This petition was dismissed. 192 U. S. 566. Meanwhile the Supreme Court in U. S. *ex rel.* Steinmetz *v.* Allen 192 U. S. 543 held a requirement for division to be a rejection of an application, and, therefore, under the statute, appealable. The Supreme Court having so held, the proceedings in this case were resumed in the Patent Office and the Examiner was

directed to forward the appeal to the Examiners-in-chief. From the Examiner's statement forwarding the appeal it appears that in originally requiring division the Examiner relied not only upon the clause of Rule 41 which prohibited the joinder of process and apparatus claims under any circumstances, which clause was held invalid in Steinmetz *v.* Allen, *supra,* but also upon the ground that different subjects of invention were presented in the same application. Provision was contained in Rule 41 for such objection. That paragraph of the rule is as follows:

"Two or more independent inventions cannot be claimed in one application; but where several inventions are dependent upon each other and mutually contribute to produce a single result they may be claimed in one application."

The Examiners-in-chief heard the appeal and a majority of them in a very elaborate and able opinion, in which they recognized to the fullest extent the rule laid down by the Supreme Court in Steinmetz *v.* Allen, *supra,* decided that the Examiner was right in the case at bar in requiring division between the process and apparatus claims. From this decision an appeal was taken to the Commissioner in person who affirmed the decision of the Board as to claim one but reversed it as to claims two and three.

Before passing to the consideration of the main question it may be well to see whether the position of appellant is correct in maintaining that the Commissioner has refused to permit him to join all the claims for the alleged process in one application. We do not so read his decision. He has merely held that claims two and three for the alleged process may be retained in the present application with the three claims for the apparatus. He has not held, nor intended to hold, as we construe his decision, that appellant may not, if it be finally decided that claim one cannot be joined with the apparatus claims, that he may present the three process claims in one application and the three apparatus claims in another application. All that is denied him is the right to retain claim one with the apparatus claims.

For a better understanding of the questions involved all six of the claims will be set out. They read as follows:

1. "The process of removing incrustations of calcium sulphate from heating surfaces, consisting in condensing steam in contact with said surfaces by carrying off the heat from the opposite side of the heat-conducting walls, substantially as described."

2. "The process of removing incrustations of calcium sulphate from heating surfaces, consisting in condensing steam in contact with said surface by transferring its heat to brine of lower temperature on the opposite side of the heat-conducting walls and so carrying off the heat, the steam and brine being applied alternately to each side of said heat-conducting walls so that the heating of the brine and the removal of the incrustation from a previous heating proceed together, substantially as described."

3. "The process of removing incrustations of calcium sulphate from heating surfaces, consisting in condensing steam in contact with said surfaces by transferring its heat to saturated boiling brine

of lower temperature on the opposite side of the heat-conducting walls and so carrying off the heat, the steam and brine being applied alternately to each side of said heat-conducting walls so that the evaporation of the brine with precipitation of salt and the removal of the incrustation from a previous heating proceed together, substantially as described."

4. "An apparatus divided into chambers by heat-conducting walls and provided as to one chamber with a steam supply pipe, a brine supply conduit, and means for withdrawing the products of the steam-condensing and brine-heating operations, and as to other chamber with a steam supply pipe, means for supplying a cooling medium, and means for withdrawing the products of the steam-condensing and the cooling-medium-heating operations, substantially as described."

5. "An apparatus divided into chambers by heat-conducting walls and having each chamber provided with a steam supply pipe, a brine supply conduit, and means for withdrawing the products of the steam-condensing and brine-heating operations, substantially as described."

6. "An apparatus divided into chambers by heat-producing walls and having each chamber provided with a steam-supply pipe, a brine-supply conduit and means for withdrawing water from the steam condensing operation and water vapor and salt from the brine-heating operation, substantially as described."

As before stated the question to be determined on this appeal is whether or not the Commissioner erred in requiring that claim one be divided from the apparatus claims. No other question is before us. The Commissioner permits the inclusion of process claims two and three with the apparatus claims upon the ground that they contain limitations which require that the process be carried out by the use of the specific apparatus set out in the apparatus claims. While expressing doubt whether such limitations can be considered proper steps of the process, he held that that question was not then before him, and concluded, that for the purpose of determining the question of division, the claims must be taken as they read. He says, "If they contain limitations, whether proper or improper, which make the alleged process claims indivisible from the apparatus claims, division cannot be required." He construes claim one as one for a process consisting in the single step of condensing steam in contact with the incrusted surfaces of heat conducting walls by carrying off heat from the opposite side of the wall. While admitting that the apparatus described in the apparatus claims may be used in carrying out the process set out in this claim he states that, "It is very clear, however, that the process may be performed without using the particular apparatus disclosed and that the particular apparatus may be used without performing the process. Neither, therefore, depends upon the other."

"The appellant has discovered that incrustation may be removed by condensing steam upon it, and this idea is the basis for his process claims. He has also devised convenient means for performing

his process, and such means constitutes the basis for his apparatus claims. The two things are separate and independent, both in conception and in execution. The process which consists in condensing steam upon an incrusted surface and apparatus which consists of two chambers separated by a heat conducting partition, and provided with certain inlets and outlets, have so little in common and there is such an utter absence of necessary relationship between them, that it is difficult to see upon what theory they could be regarded as one invention or as dependent inventions."

We fully agree with the quoted statement which is correct in point of fact and logical in its conclusion. We do not consider it necessary to furnish illustrations. They will occur to anyone who examines the specification. Granting that there is any discretion vested in the Commissioner of Patents to require division between process and apparatus claims, when the process may be carried out by the use of apparatus other than the particular apparatus described, and that the apparatus claimed may be used for purposes other than practicing the particular process, or admitting that the statute either permits, or requires, division between claims for process and apparatus when they are not dependent, but are independent inventions, then the discretion vested in the Commissioner has been properly exercised and will not be disturbed by us.

Appellant in support of his appeal presents these points:

"I. The Commissioner's decision is predicated upon an invalid, because unconstitutional, statute.

"II. The Commissioner exercised an invalid authority in rendering his decision.

"III. The Commissioner invaded appellant's legal rights in rendering his said decision.

"IV. The Commissioner erred in many material respects."

If appellant is to be understood as attacking the constitutionality of section 4886 of the Revised Statutes because it provides that inventions or discoveries may be either arts, machines, manufactures or compositions of matter, and because presumptively no two of these subjects are one invention, it is a sufficient answer to say that inventions have been thus distinguished continuously since 1793, and that the Court of last resort has been called upon to consider, from one standpoint or another, this division of inventions, and has frequently recognized the distinctions between them without ever intimating that the legislative branch of the government had exceeded its power in so classifying inventions. As we interpret the decision of the Supreme Court in Steinmetz *v.* Allen, *supra*, it recognizes that inventions are lawfully distinguished into the four classes before enumerated, and that each of them is, or may be, a separate, independent invention, or as is said, in speaking of a process and apparatus, "they may be completely independent."

If section 4886 is to be held invalid, such ruling will have to be by the Supreme Court. For us to do so would be in effect overruling many decisions of that Court. In Rubber Co. *v.* Goodyear, 9 Wall. 788, after defining patentable subjects as of the four enumerated kinds the court said: "The patentability, or the issuing

of a patent as to one, in no wise affects the rights of the inventor or discoverer in respect to the other." Again in Heald *v.* Rice, 104 U. S. 737 the Court said, in speaking of an apparatus and a process claim, "It might well be that Rise was entitled to patents for both, separately, or to one for both inventions. But it is too plain for argument that they are perfectly distinct." Measured by the rule that process and apparatus may be completely independent and subjects of separate patents we think that in the present case claim one is clearly for a different invention than the invention of the apparatus claims. See also Cochrane *v.* Deener, 94 U. S. 780; James *v.* Campbell 104 U. S. 356; Steinmetz *v.* Allen, *supra.*

It is next urged that the Commissioner had no valid authority to require division in this case. The ruling of the Supreme Court in Steinmetz *v.* Allen, *supra,* is the guiding authority to govern in the decision of this question as to the power of the Commissioner in the premises. From a careful reading of the opinion in that case we deduce the conclusion that a process and an apparatus, while presumptively independent inventions when considered in the light of section 4886 of the Revised Statutes, they nevertheless may be so "connected in their design and operation" as to constitute a unitary invention; that when constituting independent inventions they may not be claimed in one and the same application; that when so dependent as to constitute a unitary invention they may be claimed in one and the same application.

If we are correct in our views of the conclusions of the Supreme Court, it follows that the application of the rule to a given case involves the exercise of judgment and discretion in every case. The facts of each case must be considered, with the burden upon the applicant who asserts that two statutory inventions are one unitary invention. We are confirmed in this conclusion by the utterances of the Court in the Steinmetz case. At page 560 the learned justice who wrote the opinion quoted with approval the following from the opinion of the Court in an earlier case, Bennet *v.* Fowler, 8 Wall. 445: "It is difficult, perhaps impossible, to lay down any general rule by which to determine when a given invention or improvement shall be embraced in one, two, or more patents. Some discretion must necessarily be left on this subject to the head of the Patent Office. It is often a nice and perplexing question." On page 561 it is further said, in referring to rule 41: "Without that rule the action of the Patent Office can be accommodated to the character of inventions, and discretion can be exercised, and when exercised, we may say in passing, except in cases of clear abuse, the Courts will not review it." The statute being constitutional and the Supreme Court having laid down the rule that not in all cases can claims for process and apparatus be joined in one application, it follows that the Commissioner in requiring division exercises a valid authority and if correctly exercised, no error is committed. His decision in the case at bar being correct in fact, and warranted by law, there is no force in appellant's third point that he has been deprived of any legal rights by the Commissioner.

If, as alleged by appellant, in his fourth contention, the Com-

missioner erred in any material respects, such alleged errors, save as before considered, are not properly before us at this time and therefore need not be considered. We see no reason for disturbing the decision of the Commissioner of Patents and therefore affirm it, and it is so ordered.

The Clerk of the Court will certify this opinion and proceedings in this Court in the premises to the Commissioner of Patents, according to law.

Affirmed.

TUESDAY, *February 6th, A. D.* 1906.

January Term, 1906.

In the Matter of the Application of HERMAN FRASCH. No. 323, Patent Appeals.

Improvement in Means for Removing Incrustation of Calcium Sulphate from Brine Heating Surfaces. Serial No. 736,843.

Appeal from the Commissioner of Patents.

This cause came on to be heard on the transcript of the record from the Commissioner of Patents, and was argued by counsel. On consideration whereof, It is now here ordered and adjudged by this Court that the decision of the said Commissioner of Patents in this cause, be, and the same is hereby affirmed.

Per MR. JUSTICE DUELL.

February 6, 1906.

Court of Appeals, District of Columbia, January Term, 1907.

In the Matter of the Application of HERMAN FRASCH. Patent Appeal Docket, No. 323.

Now comes the above named applicant (appellant) and prays the allowance of an appeal in the above entitled case, as well as a writ of error also, to remove the same into the Supreme Court of the United States, and for cause shows that said case is one in which is drawn in question the validity of a statute of the United States, as well as also the validity of an authority exercised under the United States, and assigns the following as errors committed by the honorable Court of Appeals for the District of Columbia.

First. The court erred in affirming the decision of the Commissioner of Patents.

Second. The court erred in affirming the decision of the Commissioner of Patents in requiring applicant (appellant) to divide the claims of his application for patent.

Third. The court invaded the legal rights of applicant (appellant) in denying to him

"The right to [illegible] claim 1 with the apparatus claims" (column 2 of page 1050 of volume 122 of Official Gazette).

Fourth. The court erred in failing to give proper (if any) weight to the opinion of the Supreme Court U. S. in *ex parte* Frasch wherein the present applicant (appellant) was petitioner in respect to the present matter of division and wherein Mr. Justice McKenna, on behalf of the court, said:

"We have just held in *United States v. Allen* that rule 41 of the Patent Office, in so far as it requires a division between claims for a process and claims for an apparatus, if they are related and dependent inventions, is invalid." (192 U. S., 566.)

Fifth. The court erred in construing the holdings of the Supreme Court U. S. in United States on the relation of Steinmetz *v.* Allen (192 U. S., 543).

Sixth. The court erred in holding that process and apparatus

"connected in their design and operation" (column 2 of page 1050 of volume 122 of Official Gazette)

may not always

"be claimed in one and the same application" (*idem*),

but only

"when so dependent as to constitute a unitary invention" (*idem*)

within at least the definitions of the Court of Appeals D. C. in its opinion in the present case.

Seventh. The court erred in holding that the process of applicant's (appellant's) claim 1 and the apparatus of his claims 4, 5, 6 are not such

"related and dependent inventions" (*ex parte* Frasch, as above)

as may be claimed both of them in the present application.

Eighth. The court erred in holding that the process of applicant's (appellant's) claim 1 and the apparatus of his claims 4, 5, 6 are not

"so dependent as to constitute a unitary invention" (column 2 of page 1050 of volume 122 of Official Gazette).

Ninth. The court erred in basing its decision on alleged facts not disclosed by the record.

Tenth. The court erred in basing its decision on what it alleges

"will occur to any one who examines the specification" (column 1 of page 1050 of volume 122 of Official Gazette).

Eleventh. The court erred in basing its decision upon the holding that applicant's (appellant's)

"process may be carried out by the use of apparatus other than the particular apparatus described, and that the apparatus claimed may be used for purposes other than practicing the particular process" (column 1 of page 1050 of volume 122 of Official Gazette);

since, if said holding were well founded in fact, it would not fol-

low that the process and apparatus were unrelated and independent inventions, without connection in their design and operation.

Twelfth. The court erred in holding that applicant's (appellant's)

"process may be carried out by the use of other than the particular apparatus described" (column 1 of page 1050 of volume 122 of Official Gazette).

Thirteenth. The court erred in holding

"that the apparatus claimed may be used for purposes other than practicing the particular process" (column 1 of page 1050 of volume 122 of Official Gazette).

Fourteenth. The court erred in affirming the Commissioner's holding that applicant's (appellant's) process and apparatus

"are separate and independent, both in conception and execution" (column 1 of page 1050 of volume 122 of Official Gazette).

Fifteenth. The court erred in holding applicant's (appellant's) claim 1 to be

"for a different invention than the invention of the apparatus claims" (column 2 of page 1050 of volume 122 of Official Gazette).

Sixteenth. The court erred in holding, at least in effect, that applicant's (appellant's) process and apparatus are not

"dependent upon each other" (Rule 41 of the United States Patent Office, as quoted in opinion of the Court of Appeals, D. C., in column 2 of page 1049 of volume 122 of Official Gazette)

and do not

"mutually contribute to produce a single result" (*idem*).

Seventeenth. The court erred in holding the decision of the Commissioner of Patents to be the exercise of a valid authority under the United States.

Eighteenth. The court erred in holding that the Commissioner of Patents exercised a valid authority in denying to applicant (appellant)

"the right to retain claim 1 with the apparatus claims" (column 2 of page 1049 of volume 122 of Official Gazette).

Nineteenth. The court erred in holding that the Commissioner of Patents exercised a valid authority in requiring division of claims to matters which the statute directs and, indeed, requires to be joined in the descriptive portion of applicant's (appellant's) specification.

Twentieth. The court erred in holding, at least in effect, that rule 41 of the United States Patent Office is valid and not inconsistent with law, said rule being quoted in its opinion as follows:

"Two or more independent inventions cannot be claimed in one application; but where several inventions are dependent upon each other and mutually contribute to produce a single result they may be claimed in one application" (column 2 of page 1049 of volume 122 of Official Gazette).

Twenty-first. The court erred in holding, at least in effect, that the establishment of rule 41 of the United States Patent Office is the exercise of a valid authority under the United States.

Twenty-second. The court erred in holding the decision of the Commissioner of Patents to be authorized by a valid statute of the United States.

Twenty-third. The court erred in holding that a statute of the United States authorizing the decision of the Commissioner of Patents exists.

Twenty-fourth. The court erred in affirming the validity of a statute of the United States authorizing the decision of the Commissioner of Patents.

Twenty-fifth. The court erred in holding that section 4886 of the revised statutes of the United States, or any other statute thereof, does or can provide constitutionally.

"that inventions or discoveries may be either arts, machines, manufactures, or compositions of matter" (column 1 of page 1050 of volume 122 of Official Gazette).

in the sense of permitting independent exclusive rights to be secured to such subjects respectively, in all cases.

Twenty-sixth. The court erred in holding that section 4886 of the revised statutes of the United States, or any other statute thereof, does or can provide constitutionally

"that inventions or discoveries may be either arts, machines, manufactures or compositions of matter" (column 1 of page 1050 of volume 122 of Official Gazette)

in the sense of permitting separate patents (section 4884 R. S.) which should respectively contain applicant's (appellant's) claim 1 for a process and his claims 4, 5, 6 for apparatus, in addition to the statutory description (section 4888 R. S.) necessary to support such claim or claims.

Twenty-seventh. The court erred in holding, at least in effect, that the Constitution of the United States in empowering Congress

"To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries;" (Art. I, sec. 8, clause 8).

authorizes it to secure mutually exclusive rights in the discovery or discoveries of an inventor.

Twenty-eighth. The court erred in not reversing the decision of the Comissioner of Patents.

Twenty-ninth. The court erred in not allowing applicant (appellant)

"to retain claim 1 with the apparatus claims" (column 1 of page 1049 of volume 122 of Official Gazette).

Thirtieth. The court erred in refusing to applicant (appellant) the patent applied for.

HERMAN FRASCH,
By CHAS. J. HEDRICK,
His Attorney.

CHAS. J. HEDRICK,
Solicitor and of Counsel.

Washington, D. C., January —, 1907.

(Endorsed:) Patent Appeal Docket No. 323. In the Matter of the Application of Herman Frasch. Motion for Appeal and Writ of Error to Sup. Ct. U. S. & Assignment of Errors. Court of Appeals, District of Columbia. Filed Jan. 10, 1907. Henry W. Hodges, Clerk.

THURSDAY, *January 10th, A. D.* 1907.

In the Matter of the Application of HERMAN FRASCH. No. 323, Patent Appeals.

The petition for the allowance of an appeal and writ of error to the Supreme Court of the United States in the above entitled cause was submitted to the consideration of the Court by Mr. Charles J. Hedrick, attorney for the appellant, in support of petition.

MONDAY, *January 14th, A. D.* 1907.

In the Matter of the Application of HERMAN FRASCH. No. 323, Patent Appeals.

Opinion on Petition for Appeal and Writ of Error.

(Mr. Chief Justice SHEPARD delivered the opinion of the Court:)

We are inclined to the view that this case is not appealable to the Supreme Court of the United States, but as the question has never been directly decided, so far as we are advised, we will grant the petition in order that the question of the right to appeal in such a case may be directly presented for the determination of the Court of last resort.

January Term, 1907.

In the Matter of the Application of HERMAN FRASCH. No. 323, Patent Appeals.

On consideration of the petition for the allowance of an appeal and writ of error to the Supreme Court of the United States in the above entitled cause, It is by the Court this day ordered that said appeal and writ of error, be, and the same are hereby, allowed, and the bond for costs on said appeal and writ of error is hereby fixed at the sum of three hundred dollars.

Per MR. CHIEF JUSTICE SHEPARD.

January 14, 1907.

UNITED STATES OF AMERICA, *ss:*

The President of the United States to the Honorable the Justices of the Court of Appeals of the District of Columbia, Greeting:

Because in the record and proceedings, as also in the rendition of the judgment of a plea which is in the said Court of Appeals before you, or some of you, In the Matter of the Application of Her-

man Frasch a manifest error hath happened, to the great damage of the said Herman Frasch as by his complaint appears. We being willing that error, if any hath been, should be duly corrected, and full and speedy justice done to the parties aforesaid in this behalf, do command you, if judgment be therein given, that then under your seal, distinctly and openly, you send the record and proceedings aforesaid, with all things concerning the same, to the Supreme Court of the United States, together with this writ, so that you have the same in the said Supreme Court at Washington, within 30 days from the date hereof, that the record and proceedings aforesaid being inspected, the said Supreme Court may cause further to be done therein to correct that error, what of right, and according to the laws and customs of the United States should be done.

Witness the Honorable Melville W. Fuller, Chief Justice of the United States, the 14th day of January, in the year of our Lord one thousand nine hundred and seven.

[Seal Court of Appeals, District of Columbia.]

HENRY W. HODGES,
Clerk of the Court of Appeals
of the District of Columbia.

Allowed by—

——— ———.

(*Bond on Appeal and Writ of Error.*)

Know all men by these presents, That we, Herman Frasch, as principal, and The United States Fidelity & Guaranty Co., a corporation of the State of Maryland, as surety, are held and firmly bound unto the Commissioner of Patents in the full and just sum of three hundred dollars to be paid to the said Commissioner of Patents, his certain attorney; to which payment, well and truly to be made, we bind ourselves, our heirs, executors, and administrators, jointly and severally by these presents.

Sealed with our seals and dated this 23d day of January, in the year of our Lord one thousand nine hundred and seven.

Whereas, lately at a Court of Appeals of the District of Columbia, in a suit depending in said Court, between said Herman Frasch and said Commissioner of Patents, a decree and judgment was rendered against the said Herman Frasch and the said Herman Frasch having prayed and obtained an appeal to the Supreme Court of the United States and also having obtained a writ of error and filed a copy thereof in the Clerk's Office of the said Court to reverse the decree and judgment in the aforesaid suit, and a citation directed to the said Commissioner of Patents citing and admonishing him to be and appear at a Supreme Court of the United States, to be holden at Washington, within thirty days from the date thereof:

Now the condition of the above obligation is such, That if the said Herman Frasch shall prosecute said appeal and said writ of error to effect, and answer all damages and costs if he fail to make

his plea good, then the above obligation to be void; else to remain in full force and virtue.

Sealed and delivered in the presence of—

HERMAN FRASCH. [SEAL.]
THE UNITED STATES FIDELITY
& GUARANTY CO., [SEAL.]
By J. S. SWORMSTEDT, [SEAL.]
Attorney in Fact.

[Seal of the United States Fidelity and Guaranty Co.]

I consent to the acceptance of this Bond.
F. BAYARD,
Attorney for the Commissioner of Patents.

Approved by—
SETH SHEPARD,
Chief Justice Court of Appeals
of the District of Columbia.

[Endorsed:] No. 323, Patent Appeals. In the Matter of the Application of Herman Frasch. Bond for costs on Appeal and Writ of Error to Supreme Court, U. S. Court of Appeals, District of Columbia. Filed Jan. 24, 1907. Henry W. Hodges, Clerk.

January Term, 1907.

In the Matter of the Application of HERMAN FRASCH. No. 323, Patent Appeals.

The Clerk will please issue citation on appeal and writ of error to F. I. Allen, Commissioner of Patents.

CHAS. J. HEDRICK,
Attorney for Herman Frasch.

Washington, D. C., January 23, 1907.

(Endorsed:) No. 323 Patent Appeals. Order of Appellant's attorney as to service of citation. Court of Appeals, District of Columbia, filed Jan. 24, 1907. Henry W. Hodges, Clerk.

UNITED STATES OF AMERICA, *ss:*

To Frederick I. Allen, Commissioner of Patents, Greeting:

You are hereby cited and admonished to be and appear at a Supreme Court of the United States, at Washington, within 30 days from the date hereof, pursuant to an order allowing an appeal, filed in the Clerk's Office of the Court of Appeals of the District of Columbia, wherein Herman Frash, is appellant and you are appellee, to show cause, if any there be, why the decree rendered

against the appellant should not be corrected, and why speedy justice should not be done to the parties in that behalf.

Witness, the Honorable Seth Shepard, Chief Justice of the Court of Appeals of the District of Columbia, this 24th day of January, in the year of our Lord one thousand nine hundred and seven.

SETH SHEPARD,
Chief Justice of the Court of Appeals of the District of Columbia.

Service accepted this 24th day of January, 1907.
FREDERICK I. ALLEN.

[Endorsed:] Court of Appeals, District of Columbia. Filed Jan. 24, 1907. Henry W. Hodges, Clerk.

UNITED STATES OF AMERICA, *ss:*

To Frederick I. Allen, Commissioner of Patents, Greeting:

You are hereby cited and admonished to be and appear at a Supreme Court of the United States, at Washington, within 30 days from the date hereof, pursuant to a writ of error, filed in the Clerk's Office of the Court of Appeals of the District of Columbia, wherein Herman Frasch is plaintiff in error, and you are defendant in error, to show cause, if any there be, why the judgment rendered against the said plaintiff in error as in the said writ of error mentioned, should not be corrected, and why speedy justice should not be done to the parties in that behalf.

Witness, the Honorable Seth Shepard, Chief Justice of the Court of Appeals of the District of Columbia, this 24th day of January, in the year of our Lord one thousand nine hundred and seven.

SETH SHEPARD,
Chief Justice of the Court of Appeals of the District of Columbia.

Service accepted this 24th day of January, 1907.
FREDERICK I. ALLEN.

[Endorsed:] Court of Appeals, District of Columbia. Filed Jan. 24, 1907. Henry W. Hodges, Clerk.

Court of Appeals of the District of Columbia.

I, Henry W. Hodges, Clerk of the Court of Appeals of the District of Columbia, do hereby certify that the foregoing printed and typewritten pages numbered from 1 to 110 contain a true copy of the transcript of record and proceedings of said Court of Appeals In the Matter of the Application of Herman Frasch No. 323, Patent Appeals, January Term, 1907, as the same remain upon the files and records of said Court of Appeals.

In testimony whereof I hereunto subscribe my name and affix the seal of said Court of Appeals, at the City of Washington, this 25th day of January A. D. 1907.

[Seal Court of Appeals, District of Columbia.]

HENRY W. HODGES,
Clerk of the Court of Appeals
of the District of Columbia.

Endorsed on cover: File No. 20,546. District of Columbia Court of Appeals. Term No. 581. Herman Frasch, appellant, and plaintiff in error, *vs.* Frederick I. Allen, commissioner of patents. Filed January 25th, 1907. File No. 20,546.

FILED.
FEB 4 1907
JAMES H. McKENNEY,
CLERK.

IN THE

Supreme Court of the United States

October Term, A. D. 1906, No. 911. 14

HERMAN FRASCH, Appellant, *Plaintiff in Error and Petitioner,*

vs.

FREDERICK I. ALLEN, *Commissioner of Patents.*

ON APPEAL FROM AND IN ERROR TO THE COURT OF APPEALS OF THE DISTRICT OF COLUMBIA.

Petition for Writ of Certiorari.

CHAS. J. HEDRICK,
Of Counsel.

HERMAN FRASCH,
By CHAS. J. HEDRICK,
His Attorney.

IN THE

Supreme Court of the United States

October Term, A. D. 1906, No. 581.

HERMAN FRASCH, Appellant, *Plaintiff in Error and Petitioner,*

vs.

FREDERICK I. ALLEN, *Commissioner of Patents.*

ON APPEAL FROM AND IN ERROR TO THE COURT OF APPEALS OF THE DISTRICT OF COLUMBIA.

Petition for Writ of Certiorari.

The above named Herman Frasch, Appellant, Plaintiff in Error, and Petitioner, prays a writ of certiorari to the Court of Appeals of the District of Columbia in the above entitled case and in support thereof says:

These proceedings arise out of an application by said Frasch for a patent of invention for certain new and useful improvements in means for removing incrustation of

calcium sulphate from brine-heating surfaces, which application was removed into the Court of Appeals, D. C. (Record, pp. 87 and 1 to 8), by appeal under sections 4911 to 4914, both inclusive, of the Revised Statutes, U. S., and section 228 of Code, D. C.

The object of the invention is to avoid difficulties incident to the heating of brine by steam conductively in the manufacture of salt, which difficulties arise in consequence of the well nigh (if not quite) universal presence of calcium sulphate in solution in the brine. The chief feature and practical gist of the invention consists in utilizing the same condensing steam simultaneously to heat brine by conduction (the steam and brine being on opposite sides of the heat conducting walls) and to remove incrustation of calcium sulphate by contact (the steam and the incrustation being on the same side of said walls and the incrustation having been deposited in a previous operation of conductively heating brine). The brine and the steam are made to swap places at intervals.

For the performance of this process, tangible apparatus is necessary; and to have an appropriate apparatus it became necessary to modify or add to the apparatus previously employed for the conductive heating of brine by steam, by providing certain additional inlets and outlets. In the new or improved apparatus thus obtained the chambers on both sides of the heat conducting walls are each of them provided with steam and brine inlets and with outlets for the products of both the brine heating and the incrustation removing operations.

Applicant's specification (Record, pp. 16 to 22) discloses the process carried into effect by the aid of the apparatus (Sec. 4888, R. S.). It was necessary to

> "show some particular mode or some apparatus by which the process can be applied with at least some beneficial result, in order to show that it is capable of

being exhibited and performed in actual experience" Tilghman vs. Proctor, 102 U. S., 707, 729).

It was also necessary that

> "in case of a machine, he shall explain the principle thereof, and the best mode in which he has contemplated applying that principle, so as to distinguish it from other inventions (Sec. 4888, R. S.).

It was, in fact, required by law that his specification disclose

> "the whole truth relative to his invention or discovery" (Sec. 4920, R. S., first defense; Electric Boot and Shoe Finishing Co. vs. Little, 75 Fed. Rep., 276).

His specification contains six claims, three on the process and three on the apparatus.

> "Before any inventor or discoverer shall receive a patent for his invention or discovery * * * he shall particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery" (Sec. 4888, R. S.).

The three process claims differ in scope, but are exhibited in the same

> "act or mode of acting" (Tilghman vs. Proctor, 102 U. S., 707, 728),

that is to say, in the "act or mode of acting" whereby the steam, which, by conduction, heats brine on the opposite side of interposed heat conducting walls, removes an incrustation of calcium sulphate, by erosion, from the steam side of said walls.

The three apparatus claims differ in scope, but are exhibited in the same

> "thing * * * visible to the eye—an object of perpetual observation" (Tilghman vs. Proctor, 102 U. S., 707, 728),

that is to say, in a device for heating brine by steam conductively wherein each chamber is provided both with steam inlets and with brine inlets, as well as with outlets for the products of both the brine heating and the incrustation removing operations, in order that the steam and brine can be made to swap places with reference to the heat conducting walls.

Every time the steam and brine swap places in the apparatus the "act or mode of acting" constituting the process is performed anew. To allow such "act or mode of acting" to be performed at all it is necessary to have mechanical means whereby steam and brine can be made to swap places; because the steam which removes incrustation of calcium sulphate deposited out of brine is necessarily in contact with surfaces of heat conducting walls with which brine was previously in contact.

Upon

> "examination * * * of the alleged new invention or discovery" (Sec. 4893, R. S.),

the application was rejected (Sec. 4903, R. S.; Record, p. 23); and upon applicant's persisting

> "in his claim for a patent * * * without altering his specifications * * * a re-examination of the case" (Sec. 4903, R. S., Record, pp. 23 to 29)

was ordered and the former action was repeated, the case thereby becoming

> "twice rejected" (Sec. 4909, R. S., Record, p. 29).

Applicant thereupon appealed

> "from the decision of the primary examiner * * * to the board of Examiners-in-Chief" (Sec. 4909, R. S., Record, pp. 41 to 43).

The ground of the rejection was

> "that two different subjects of invention are presented —process and apparatus. Under Rule 41 their joinder in one application is improper, and division is, therefore, required at the outset" (Letter of Examiner December 16, 1899, Record, p. 23).

Upon the further ground that this action was not a rejection, the Examiner would not allow the appeal to the Examiners-in-Chief (Record, pp. 29 to 34); and upon direct application to the Commissioner in person (Record, pp. 34 to 36) the latter sustained the Examiner both in his refusal to allow the appeal and in his requirement of division (Record, pp. 38 and 41).

Upon the theory that these rulings constituted a

"decision of the Commissioner" (Sec. 4911),

with which applicant was "dissatisfied," he appealed to the Court of Appeals, D. C. (Sec. 228, Code, D. C.; Record, pp. 43 and 9 to 15).

This appeal was dismissed by the Court of Appeals without prejudice for want of jurisdiction, upon the view that there had

> "been no denial of the application in this case" (C. D., 1902, 560, at top of 562; also 100 O. G., 1977).

Thereupon petition was made to the Supreme Court of the United States for a mandamus; a rule to show cause issued; a return was made; and the petition was dismissed, the court saying:

> "We have just held in *United States ex rel. Steinmetz vs. Allen, Commissioner of Patents*, that Rule 41 of the Patent Office, in so far as it requires division between claims for a process and claims for an apparatus, if they are related and dependent inventions, is invalid. We, however, held that mandamus to the Commissioner, not appeal to the Court of Appeals of the District, was the proper remedy" (C. D., 1904, 716, 717; same case, 192 U. S., 566; also 109 O. G., 554).

In United States vs. Allen the court held a requirement of division to be a rejection appealable in the first instance to the Examiners-in-Chief. Proceedings in the Patent Office were consequently resumed (Record, pp. 45 to 48). The Examiners-in-Chief heard the appeal from the requirement of division and affirmed the Examiner (Record, pp. 55 to 72). One of the three members of the board dissented on the ground

> "that the application discloses only one invention" (Record, p. 72).

Upon appeal to the Commissioner in person (Sec. 4910, R. S.; Record, pp. 72 to 80) the

> "decision of the Examiners-in-Chief requiring that claims 1, 2 and 3 be divided from claims 4, 5 and 6 is affirmed as to claim 1, and reversed as to claims 2 and 3" (Record, p. 83).

After petition for rehearing and an alternative request for explanations had been made and denied (Record, pp. 83 to 86), appeal was taken to the Court of Appeals of the District of Columbia (Record, pp. 87 and 1 to 8); and said Court of Appeals sustained the Commissioner's decision (Record, pp. 88 to 93).

Its decree and judgment is as follows:

> "Appeal from the Commissioner of Patents. This cause came on to be heard on the transcript of record from the Commissioner of Patents, and was argued by counsel. On consideration whereof, it is now here ordered and adjudged by this court that the decision of the said Commissioner of Patents in this cause be, and the same is hereby, affirmed" (Record, p. 93).

The applicant (appellant) was allowed an appeal to the Supreme Court of the United States; and he also obtained a writ of error issuing therefrom to the Court of Appeals, D. C. (Record, pp. 93 to 98). Both the appeal and writ of error have been perfected by bond and citations (Record, pp. 98 to 100); the transcript has been filed in the Supreme Court of the United States; the case has been docketed therein as No. 581; and the record has been printed. The assignments of error were filed in the court below, and are included in the transcript (Record, pp. 93 to 96).

The reason for proceeding both on appeal and in error is the fact that the present appears to be the first case in which an appeal has been allowed to this court, or a writ of error obtained therefrom, in order for it to review, upon direct proceedings, a decision rendered by the Court of Appeals, D. C., or by the Supreme Court of the District, upon appeal from the Commissioner of Patents (Sec. 4911, R. S., and Sec. 228, Code, D. C.).

In part for the same reason, out of abundant caution, the present petition for certiorari is presented, the same to be determined, with the approval of this court and so far as may be possible, concurrently with the appeal and writ of error.

Another reason for asking certiorari is that the jurisdiction of this court on appeal from and error to the Court of Appeals, D. C., is dependent, so far as the present case is concerned, upon the fact that in it is drawn in question

the validity and not merely the construction or scope of a statute of or an authority exercised under the United States, and that the line of separation between validity and scope or construction does not seem so clear as to avoid the possibility of differences of opinion. The pendency of the petition for certiorari can prejudice no one.

A third reason for asking certiorari is that this court may find, when the whole case is before it on the merits, that it can be decided favorably to appellant (plaintiff in error and petitioner) without deciding that the statute and authority (either or both) are invalid.

> "The supreme court, having acquired jurisdiction of a case on the ground that the constitutionality of a law of the United States is drawn in question, may dispose of all the questions in the case, whether of jurisdiction or of merits" (Fed. Rep. Digest, Column 3134, citing Chappell vs. United States, 160 U. S., 499).

> "Where an appeal or writ of error is taken direct to the Supreme Court under Act Cong. March 3, 1891, Sec. 5, in a case in which the constitutionality of a law of the United States is drawn in question, the court acquires jurisdiction of the entire case, and of all questions involved in it, and not merely of the question of the constitutionality of the law of the United States" (Fed. Rep. Digest, Column 520, citing Horner vs. United States, 143 U. S., 570).

See also Spalding vs. Mason, 161 U. S., 375, and Allen vs. St. Louis National Bank, 120 U. S., 20.

It is possible, however, that this court would hold it fitting to dispose of the case, on certiorari, in preference to appeal or error.

The decisions of the Court of Appeals, D. C., can be reexamined by the Supreme Court, U. S., in accordance with Sections 233 and 234 of the Code D. C., which are as follows:

"Sec. 233. Any final judgment or decree of the court of appeals may be re-examined and affirmed, reversed, or modified by the Supreme Court of the United States, upon writ of error or appeal, in all cases in which the matter in dispute, exclusive of costs, shall exceed the sum of five thousand dollars, in the same manner and under the same regulations as existed in cases of writs of error on judgments or appeals from decrees rendered in the Supreme Court of the District of Columbia on February ninth, eighteen hundred and ninety-three, and also in cases, without regard to the sum or value of the matter in dispute, wherein is involved the validity of any patent or copyright, or in which is drawn in question the validity of a treaty or statute of, or an authority exercised under, the United States.

"Sec. 234. In any case heretofore made final in the Court of Appeals it shall be competent for the Supreme Court of the United States to require, by certiorari or otherwise, any such case to be certified to said Supreme Court for its review and determination, with the same power and authority in the case as if it had been carried by appeal or writ of error to said Supreme Court."

"In an interference proceeding in the Patent Office between Bernardin and Northall, the Commissioner, Seymour, decided in favor of Bernardin, whereupon Northall prosecuted an appeal to the Court of Appeals of the District of Columbia. The court awarded Northall priority and reversed the Commissioner's decision" (United States vs. Duell, 86 Official Gazette, 995; 172 U. S., 576).

Bernardin did not appeal to the Supreme Court U. S., but sought relief by mandamus directed to the Commissioner. When this mandamus proceeding came on writ of error to the Supreme Court U. S., the latter (by Mr. Chief Justice Fuller) said, italics mine:

"The Court of Appeals for the District of Columbia *adjudged* that Northail was entitled to the patent. By section eight of the act establishing that court (27 Stats., 434, ch. 74), it is provided that any final *judgment or decree* thereof may be revised by this court on appeal or error in cases wherein the validity of a statute or the United States is drawn in question. The validity of the act of Congress allowing an appeal to the Court of Appeals in interference cases was necessarily determined when that court went *to judgment*, yet no attempt was made to bring the case directly to this court * * * and we think that, under the circumstances, the *remedy by appeal* existed" (United States vs. Duell, as above).

In the present case the Court of Appeals D. C. has *adjudged* that Frasch is not entitled to the patent applied for (Record, p. 93). As the opinion (Record, pp. 88 to 93) and the reasons of appeals (Record, pp. 1 to 7) show, the case is one

"in which is drawn in question the validity of a * * * statute of, or an authority exercised under, the United States" (Sec. 233 of Code D. C.).

In United States vs. Allen (192 U. S., 543), it was held by the Supreme Court U. S. that it had jurisdiction in a case wherein the validity of a rule of the Patent Office was assailed. Here not only the rule, but the validity of the authority exercised apart from any rule, is called in question and also the validity of any statute authorizing said rule or in other respects having the effect which the Court of Appeals D. C. and the Commissioner of Patents have construed the patents acts to have.

In Rousseau vs. Brown (C. D. 1903, 592; 104 O. G., 1122), the Court of Appeals declined to allow a writ of error or an appeal, on the ground, that its decision was not a final judgment or decree within the statute allowing ap-

peals to the Supreme Court U. S.; but it does not appear that the attention of the court had been called to the express opinion in United States vs. Duell, as above, that

> "the remedy by appeal existed."

Although the Supreme Court U. S. did not affirm the lower court solely for this reason, yet the expression of opinion was not obiter on that account; since it was in reference to a matter in issue and constituted an additional reason for the affirmance.

The decision of the Court of Appeals D. C., when adverse (as in the present case), is the refusal of a patent (section 4915 R. S.); and the effect of its decision whether adverse or favorable is not materially different from the corresponding judgment on a bill in equity under section 4915 R. S., under which the court

> "may adjudge that such applicant is entitled, according to law, to receive a patent for his invention, as specified in his claim, or for any part thereof, as the facts in the case may appear."

The Supreme Court U. S. has entertained jurisdiction of appeals from "such adjudication" and reversed the Circuit Court's decision on the merits. (Morgan vs. Daniels, 153 U. S., 120; and see also Gandy vs. Marble, 122 U. S., 432; Hill vs. Wooster, 132 U. S., 693; Durham vs. Seymour, 161 U. S., 235.)

In Morgan vs. Daniels the bill in equity is declared to be

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appeal from the Commissioner of Patents (before the establishment of the Court of Appeals D. C.) as

> "its adjudication"
> "conclusive on the Patent Office itself"
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The quotations are included in the excerpt in United States vs. Duell (as above).

Inasmuch as the appeal

> "deals with a question judicial in its nature, in respect of which the judgment of the court is final so far as the particular action of the Patent Office is concerned, such judgment is none the less a judgment 'because its effect may be to aid an administrative or executive body in the performance of duties legally imposed upon it by Congress in execution of a power granted by the Constitution' (Interstate Commerce Commission vs. Brimson, 154 U. S., 447)" (United States vs. Duell, as above).

The decision on appeal from the Commissioner under section 4914 R. S., and section 228 code D. C. is, therefore a

> "final judgment or decree of the court of appeals" (section 233, code D. C.).

allowing or refusing a patent. It gives or refuses to appellant

> "the exclusive rights of a patentee" (Morgan vs. Daniels, as above).

It is not material that any patent allowed by the courts on direct appeal (section 4914 R. S.) or on bill in equity

(section 4915 R. S.) can be controverted (section 4920 R. S.). A final judgment or decree can be rendered in cases where rights of possession only are involved, the judgment or decree not touching the fundamental title. A decree in equity for specific performance, as for delivery of a deed, is none the less a final decree, because the deed, when given, is not incontrovertible. It has a certain finality; but so does the grant of a patent.

These arguments were presented to the Court of Appeals in support of the petition of appeal and writ of error. The court granted the petition, but said:

> "We are inclined to the view that this case is not appealable to the Supreme Court of the United States, but as the question has never been directly decided, so far as we are advised, we will grant the petition in order that the question of the right to appeal in such a case may be directly presented for the determination of the court of last resort."

The doubt is understood to be whether the Court of Appeals' action on an appeal from the Commissioner of Patents under section 228 of code, D. C., is or is not a "final judgment or decree" within the meaning of those terms in section 233 of said code. Petitioner's reasons for believing it to be such judgment and decree have been given hereinabove; but if this belief should be ill founded the case would plainly be one

> "heretofore made final in the Court of Appeals" (Sec. 234 of code D. C.).

> "In any legal sense, action, suit and cause are convertible terms" (*Ex parte* Milligan, 4 Wallace, 3, 112).

Suit is

> "any proceeding in a court of justice by which an individual pursues that remedy which the law affords him" (Same case, page 113, quoting from Weston vs. City Council of Charleston, 2 Peters, 449).

It is

> "the prosecution of some demand in a court of justice" (same page, quoting Cohens vs. Virginia, 6 Wheaton, 264).

Suits may arise out of appeals from administrative officers. Bradley vs. People in 4 Wallace, 459, for example, was brought into this court by writ of error to the Supreme Court of Illinois to which appeal had been taken from a board of supervisors.

The Court of Appeals, D. C., exercises functions strictly judicial in reviewing on appeal the decisions of the Commissioner of Patents (United States vs. Duell, 172 U. S., 576).

The points involved in the present case and covered by the assignments of error (Record, pp. 93 to 96) can be restated as follows:

The Patent Office tribunals denied to applicant (appellant, plaintiff in error and petitioner)

> "the right to retain claim 1 with the apparatus claims" (Record, lines 33 and 34 of page 89).

in the same application; and the Court of Appeals, D. C., affirmed the denial, in apparent reliance, in part at least, upon rule 41 of the Patent Office, which is quoted in the opinion of the Court of Appeals (Record, lines 10 to 13 of page 89).

The first matter for consideration is, therefore, whether the process of applicant's said claim 1 and the apparatus of his claims 4, 5, 6, can or can not under the provisions of rule 41 of the Patent Office be claimed in the present application.

If it should be held that they can be so claimed, it will only (if at all) be necessary to consider whether the provisions of said rule allowing the joinder are or are not invalid as a restriction on the statutory powers of the Patent Office tribunals to reject for misjoinder of causes; but if it should be held that the rule makes separate applications necessary, it will then be in order to consider whether said rule is or is not invalid under the acts of Congress as a denial to applicants of a statutory right to protect in one patent inventions not permitted by said rule to be claimed in the same application.

If the rule should be held valid under the acts of Congress, it will then be necessary to inquire whether such acts are or are not within the constitutional powers of Congress. While, on the other hand, if the rule should be held invalid for either of the reasons referred to above, it will be necessary to consider first whether the statute authorizes the protection of said process and apparatus in the present application over objection thereto by the Patent Office on the grounds stated in the record, and to discuss the constitutional powers of Congress only in the event that said process and said apparatus can not be thus protected under the statutes.

And in considering this question under the statutes the first consideration is whether the Commissioner's grounds of objection do or do not constitute a statutory reason of rejection.

If it should be held that they do not, the objection, of course, falls for want of authority to make it. If it should be held that they do, then it will be necessary to consider

PAGE BLEED THRU

whether the objection is or is not well founded upon the statute and the facts.

If it should be held ill founded thereon, the objection, of course, falls for that reason, but if it should be held well founded thereon, then it will be necessary to consider whether Congress is empowered by the Constitution of the United States to make the enactments which constitute the supposed statutory foundation for the objection.

Petitions for certiorari are not uncommon in cases where the record has been brought up on appeal or error. Such a petition was received by this Court in United States vs. Allen, case 383, October Term, 1903; although it was subsequently held that the court had jurisdiction on the writ of error (C. D., 1904, 703, 708; 192 U. S., 543). The case of H. C. Payne, Postmaster-General, No. 628, October Term, 1902, was cited by petitioner (plaintiff in error) in case 383. And see also Security Trust Co. vs. Dent, 187 U. S., 237, 239; Burton vs. United States, 196 U. S., 283, 295, and Whitney vs. Dick, 202 U. S., 132, 134.

The reason for allowing certiorari, in case jurisdiction in this case on appeal or error should be denied by the court, is to be found in the nature of the questions involved and their general and wide interest, particularly to inventors.

> "Patentees are a meritorious class, and all the aid and protection which the law allows, this court will cheerfully give them (Commissioner of Patents vs. Whitely, 4 Wallace, 522, 532).

It is highly important to know whether this court can or can not upon direct proceedings review the decisions of the Court of Appeals, D. C., on appeals from the Commissioner of Patents.

It is also highly important to know what are the limitations on the powers of the Commissioner in respect to the

division of applications. That they are not unlimited was held in United States vs. Allen, above.

It is also highly important to know the rights which inventors have under the ruling of this court that

> "the statute gives the right to join inventions in one application in cases where the inventions are related" (United States vs. Allen, C. D., 1904, 703, 712; 192 U. S., 543).

This right is understood to exist whenever the inventions are

> "connected in their design and operation" (quoted on page 710 of C. D., 1904, from Hogg vs. Emerson, 11 How., 587);

which, in the case of process and apparatus, is at the least whenever they are, respectively, for

> "the art described, and the means of making it useful" (page 711 of C. D., 1904),

as in Bell's case, or whenever the statute (Secs. 4888 and 4920, R. S.) puts upon an inventor the duty of

> "disclosing the apparatus in his application for a process" (page 712 of C. D., 1904).

The Patent Office admits that under the court's rulings an applicant may have a right to join a process and an apparatus

> "if it be a fact that this machine and this art are one unitary invention" (Record, p. 60);

but it is

> "unable to find anywhere in the decision any test" (Record, p. 61).

for joinder and finds itself

> "compelled to ascertain the proper test or tests without aid from the decision" (Record, p. 61).

The quotations from pages 60 and 61 of the record occur in the majority opinion of the Examiners-in-Chief; but the Court of Appeals, by Mr. Justice Duell, refers to it as the Board's

> "very elaborate and able opinion, in which they recognize to the fullest extent the rule laid down by the Supreme Court" (Record, lines 15 and 16 of page 89).

To applicant, on the contrary, the decisions in the Patent Office and Court of Appeals, D. C., by failing to find and apply the test of

> "connection in their design and operation"

in accordance with the statute as construed by this court, seem to be in flat contradiction to this court's rulings in the Steinmetz (United States vs. Allen) and the Frasch cases (192 U. S., 543 and 566, respectively).

Recurring to precedents in the matter of petition for certiorari in cases pending on appeal or error or both, it is noted that at this present term in case 395 the court on January 28, ultimo, referred to final hearing on the merits both the petition of Fields, plaintiff in error, for certiorari, and the motion of the United States, defendant in error, to dismiss the writ of error.

Wherefore, this petitioner (applicant for patent and in this court appellant and plaintiff in error) prays:

1. That the writ of certiorari may be issued to the Court of Appeals of the District of Columbia;

2. That the record on appeal and error already in this

court in case 581 may be received and accepted as the record on certiorari;

3. That the proceedings in said case 581 and in the case on certiorari may be concurrent or as nearly so as possible;

4. That the briefs and arguments to be filed in said case 581 may be received and applied in the case on certiorari;

5. That such other and further relief may be given to petitioner as may be proper in the premises.

HERMAN FRASCH,
By CHAS. J. HEDRICK,
His Attorney.

CHAS. J. HEDRICK,
Of Counsel.

DISTRICT OF COLUMBIA, *ss*:

Personally appeared CHARLES J. HEDRICK, of Washington, D. C., who, being duly sworn, deposes and says that he has read the foregoing petition and knows the contents thereof; that the matters and things therein set forth are true to the best of his knowledge, information and belief; that he has been solicitor and of counsel for the said Herman Frasch from the time of filing the latter's application for patent up to and including the present time; that he has conducted and managed all matters relating to such application for patent; and that he is fully conversant with all said matters.

CHAS. J. HEDRICK.

Sworn to and subscribed before me, this second day of February, 1907.

PAUL F. GROVE,
Notary Public, D. C.

Service acknowledged this second day of February, 1907.

HENRY M. HOYT,
For Commissioner of Patents.
W. R. H.

IN THE

Supreme Court of the United States

October Term, 1907. No. 211.
(No. 581 of October Term, 1906).

HERMAN FRASCH, *Appellant, Plaintiff in Error and Petitioner,*

vs.

FREDERICK I. ALLEN, *Commissioner of Patents,*
EDWARD B. MOORE, *Successor in Office.*

ON APPEAL FROM AND IN ERROR TO THE COURT OF APPEALS OF THE DISTRICT OF COLUMBIA, AND ALSO ON PETITION FOR CERTIORARI.

Brief for Herman Frasch, Appellant, Plaintiff in Error and Petitioner.

The present brief is additional to arguments contained in the transcript of record. In this brief, pages 2 to 18, both inclusive, are (except the last part of page 18) the same as the similarly numbered pages of the petition for writ of certiorari; which petition was received by the court February 4, 1907, and referred to the final hearing on the merits.

The heads of the argument are restated at the end of this brief, with corresponding references to the pages of the brief.

These proceedings arise out of an application by Herman Frasch for a patent of invention for certain new and useful improvements in means for removing incrustation of calcium

sulphate from brine-heating surfaces, which application was removed into the Court of Appeals, D. C. (Record, pp. 87 and 1 to 8), by appeal under sections 4911 to 4914, both inclusive, of the Revised Statutes, U. S., and section 228 of Code, D. C.

The object of the invention is to avoid difficulties incident to the heating of brine by steam conductively in the manufacture of salt, which difficulties arise in consequence of the well nigh (if not quite) universal presence of calcium sulphate in solution in the brine. The chief feature and practical gist of the invention consists in utilizing the same condensing steam simultaneously to heat brine by conduction (the steam and brine being on opposite sides of the heat conducting walls) and to remove incrustation of calcium sulphate by contact (the steam and the incrustation being on the same side of said walls and the incrustation having been deposited in a previous operation of conductively heating brine). The brine and the steam are made to swap places at intervals.

For the performance of this process, tangible apparatus is necessary; and to have an appropriate apparatus it became necessary to modify or add to the apparatus previously employed for the conductive heating of brine by steam, by providing certain additional inlets and outlets. In the new or improved apparatus thus obtained the chambers on both sides of the heat conducting walls are each of them provided with steam and brine inlets and with outlets for the products of both the brine heating and the incrustation removing operations.

Applicant's specification (Record, pp. 16 to 22) discloses the process carried into effect by the aid of the apparatus (Sec. 4888, R. S.). It was necessary to

> "show some particular mode or some apparatus by which the process can be applied with at least some beneficial result, in order to show that it is capable of

being exhibited and performed in actual experience" Tilghman vs. Proctor, 102 U. S., 707, 729).

It was also necessary that

> "in case of a machine, he shall explain the principle thereof, and the best mode in which he has contemplated applying that principle, so as to distinguish it from other inventions (Sec. 4888, R. S.).

It was, in fact, required by law that his specification disclose

> "the whole truth relative to his invention or discovery" (Sec. 4920, R. S., first defense; Electric Boot and Shoe Finishing Co. vs. Little, 75 Fed. Rep., 276).

His specification contains six claims, three on the process and three on the apparatus.

> "Before any inventor or discoverer shall receive a patent for his invention or discovery * * * he shall particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery" (Sec. 4888, R. S.).

The three process claims differ in scope, but are exhibited in the same

> "act or mode of acting" (Tilghman vs. Proctor, 102 U. S., 707, 728),

that is to say, in the "act or mode of acting" whereby the steam, which, by conduction, heats brine on the opposite side of interposed heat conducting walls, removes an incrustation of calcium sulphate, by erosion, from the steam side of said walls.

The three apparatus claims differ in scope, but are exhibited in the same

> "thing * * * visible to the eye—an object of perpetual observation" (Tilghman vs. Proctor, 102 U. S., 707, 728),

that is to say, in a device for heating brine by steam conductively wherein each chamber is provided both with steam inlets and with brine inlets, as well as with outlets for the products of both the brine heating and the incrustation removing operations, in order that the steam and brine can be made to swap places with reference to the heat conducting walls.

Every time the steam and brine swap places in the apparatus the "act or mode of acting" constituting the process is performed anew. To allow such "act or mode of acting" to be performed at all it is necessary to have mechanical means whereby steam and brine can be made to swap places; because the steam which removes incrustation of calcium sulphate deposited out of brine is necessarily in contact with surfaces of heat conducting walls with which brine was previously in contact.

Upon

> "examination * * * of the alleged new invention or discovery" (Sec. 4893, R. S.),

the application was rejected (Sec. 4903, R. S.; Record, p. 23); and upon applicant's persisting

> "in his claim for a patent * * * without altering his specifications * * * a re-examination of the case" (Sec. 4903, R. S., Record, pp. 23 to 29)

was ordered and the former action was repeated, the case thereby becoming

> "twice rejected" (Sec. 4909, R. S., Record, p. 29).

Applicant thereupon appealed

> "from the decision of the primary examiner * * * to the board of Examiners-in-Chief" (Sec. 4909, R. S., Record, pp. 41 to 43).

The ground of the rejection was

> "that two different subjects of invention are presented —process and apparatus. Under Rule 41 their joinder in one application is improper, and division is, therefore, required at the outset" (Letter of Examiner December 16, 1899, Record, p. 23).

Upon the further ground that this action was not a rejection, the Examiner would not allow the appeal to the Examiners-in-Chief (Record, pp. 29 to 34); and upon direct application to the Commissioner in person (Record, pp. 34 to 36) the latter sustained the Examiner both in his refusal to allow the appeal and in his requirement of division (Record, pp. 38 and 41).

Upon the theory that these rulings constituted a

"decision of the Commissioner" (Sec. 4911),

with which applicant was "dissatisfied," he appealed to the Court of Appeals, D. C. (Sec. 228, Code, D. C.; Record, pp. 43 and 9 to 15).

This appeal was dismissed by the Court of Appeals without prejudice for want of jurisdiction, upon the view that there had

> "been no denial of the application in this case" (C. D., 1902, 560, at top of 562; also 100 O. G., 1977).

Thereupon petition was made to the Supreme Court of the United States for a mandamus; a rule to show cause issued; a return was made; and the petition was dismissed, the court saying:

> "We have just held in *United States ex rel. Steinmetz vs. Allen, Commissioner of Patents,* that Rule 41 of the Patent Office, in so far as it requires division between claims for a process and claims for an apparatus, if they are related and dependent inventions, is invalid. We, however, held that mandamus to the Commissioner, not appeal to the Court of Appeals of the District, was the proper remedy" (C. D., 1904, 716, 717; same case, 192 U. S., 566; also 109 O. G., 554).

In United States vs. Allen the court held a requirement of division to be a rejection appealable in the first instance to the Examiners-in-Chief. Proceedings in the Patent Office were consequently resumed (Record, pp. 45 to 48). The Examiners-in-Chief heard the appeal from the requirement of division and affirmed the Examiner (Record, pp. 55 to 72). One of the three members of the board dissented on the ground

> "that the application discloses only one invention" (Record, p. 72).

Upon appeal to the Commissioner in person (Sec. 4910, R. S.; Record, pp. 72 to 80) the

> "decision of the Examiners-in-Chief requiring that claims 1, 2 and 3 be divided from claims 4, 5 and 6 is affirmed as to claim 1, and reversed as to claims 2 and 3" (Record, p. 83).

After petition for rehearing and an alternative request for explanations had been made and denied (Record, pp. 83 to 86), appeal was taken to the Court of Appeals of the District of Columbia (Record, pp. 87 and 1 to 8); and said Court of Appeals sustained the Commissioner's decision (Record, pp. 88 to 93).

Its decree and judgment is as follows:

> "Appeal from the Commissioner of Patents. This cause came on to be heard on the transcript of record from the Commissioner of Patents, and was argued by counsel. On consideration whereof, it is now here ordered and adjudged by this court that the decision of the said Commissioner of Patents in this cause be, and the same is hereby, affirmed" (Record, p. 93).

The applicant (appellant) was allowed an appeal to the Supreme Court of the United States; and he also obtained a writ of error issuing therefrom to the Court of Appeals, D. C. (Record, pp. 93 to 98). Both the appeal and writ of error have been perfected by bond and citations (Record, pp. 98 to 100); the transcript has been filed in the Supreme Court of the United States; the case has been docketed therein as No. 581; and the record has been printed. The assignments of error were filed in the court below, and are included in the transcript (Record, pp. 93 to 96).

The reason for proceeding both on appeal and in error is the fact that the present appears to be the first case in which an appeal has been allowed to this court, or a writ of error obtained therefrom, in order for it to review, upon direct proceedings, a decision rendered by the Court of Appeals, D. C., or by the Supreme Court of the District, upon appeal from the Commissioner of Patents (Sec. 4911, R. S., and Sec. 228, Code, D. C.).

In part for the same reason, out of abundant caution, the present petition for certiorari is presented, the same to be determined, with the approval of this court and so far as may be possible, concurrently with the appeal and writ of error.

Another reason for asking certiorari is that the jurisdiction of this court on appeal from and error to the Court of Appeals, D. C., is dependent, so far as the present case is concerned, upon the fact that in it is drawn in question

the validity and not merely the construction or scope of a statute of or an authority exercised under the United States, and that the line of separation between validity and scope or construction does not seem so clear as to avoid the possibility of differences of opinion. The pendency of the petition for certiorari can prejudice no one.

A third reason for asking certiorari is that this court may find, when the whole case is before it on the merits, that it can be decided favorably to appellant (plaintiff in error and petitioner) without deciding that the statute and authority (either or both) are invalid.

> "The supreme court, having acquired jurisdiction of a case on the ground that the constitutionality of a law of the United States is drawn in question, may dispose of all the questions in the case, whether of jurisdiction or of merits" (Fed. Rep. Digest, Column 3134, citing Chappell vs. United States, 160 U. S., 499).

> "Where an appeal or writ of error is taken direct to the Supreme Court under Act Cong. March 3, 1891, Sec. 5, in a case in which the constitutionality of a law of the United States is drawn in question, the court acquires jurisdiction of the entire case, and of all questions involved in it, and not merely of the question of the constitutionality of the law of the United States" (Fed. Rep. Digest, Column 520, citing Horner vs. United States, 143 U. S., 570).

See also Spalding vs. Mason, 161 U. S., 375, and Allen vs. St. Louis National Bank, 120 U. S., 20.

It is possible, however, that this court would hold it fitting to dispose of the case, on certiorari, in preference to appeal or error.

The decisions of the Court of Appeals, D. C., can be reexamined by the Supreme Court, U. S., in accordance with Sections 233 and 234 of the Code D. C., which are as follows:

"Sec. 233. Any final judgment or decree of the court of appeals may be re-examined and affirmed, reversed, or modified by the Supreme Court of the United States, upon writ of error or appeal, in all cases in which the matter in dispute, exclusive of costs, shall exceed the sum of five thousand dollars, in the same manner and under the same regulations as existed in cases of writs of error on judgments or appeals from decrees rendered in the Supreme Court of the District of Columbia on February ninth, eighteen hundred and ninety-three, and also in cases, without regard to the sum or value of the matter in dispute, wherein is involved the validity of any patent or copyright, or in which is drawn in question the validity of a treaty or statute of, or an authority exercised under, the United States.

"Sec. 234. In any case heretofore made final in the Court of Appeals it shall be competent for the Supreme Court of the United States to require, by certiorari or otherwise, any such case to be certified to said Supreme Court for its review and determination, with the same power and authority in the case as if it had been carried by appeal or writ of error to said Supreme Court."

"In an interference proceeding in the Patent Office between Bernardin and Northall, the Commissioner, Seymour, decided in favor of Bernardin, whereupon Northall prosecuted an appeal to the Court of Appeals of the District of Columbia. The court awarded Northall priority and reversed the Commissioner's decision" (United States vs. Duell, 86 Official Gazette, 995; 172 U. S., 576).

Bernardin did not appeal to the Supreme Court U. S., but sought relief by mandamus directed to the Commissioner. When this mandamus proceeding came on writ of error to the Supreme Court U. S., the latter (by Mr. Chief Justice Fuller) said, italics mine:

> "The Court of Appeals for the District of Columbia *adjudged* that Northall was entitled to the patent. By section eight of the act establishing that court (27 Stats., 434, ch. 74), it is provided that any final *judgment or decree* thereof may be revised by this court on appeal or error in cases wherein the validity of a statute of the United States is drawn in question. The validity of the act of Congress allowing an appeal to the Court of Appeals in interference cases was necessarily determined when that court went *to judgment,* yet no attempt was made to bring the case directly to this court * * * and we think that, under the circumstances, the *remedy by appeal* existed" (United States vs. Duell, as above).

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It is not material that any patent allowed by the courts on direct appeal (section 4914 R. S.) or on bill in equity

(section 4915 R. S.) can be controverted (section 4920 R. S.). A final judgment or decree can be rendered in cases where rights of possession only are involved, the judgment or decree not touching the fundamental title. A decree in equity for specific performance, as for delivery of a deed, is none the less a final decree, because the deed, when given, is not incontrovertible. It has a certain finality; but so does the grant of a patent.

These arguments were presented to the Court of Appeals in support of the petition of appeal and writ of error. The court granted the petition, but said:

> "We are inclined to the view that this case is not appealable to the Supreme Court of the United States, but as the question has never been directly decided, so far as we are advised, we will grant the petition in order that the question of the right to appeal in such a case may be directly presented for the determination of the court of last resort."

The doubt is understood to be whether the Court of Appeals' action on an appeal from the Commissioner of Patents under section 228 of code, D. C., is or is not a "final judgment or decree" within the meaning of those terms in section 233 of said code. Petitioner's reasons for believing it to be such judgment and decree have been given hereinabove; but if this belief should be ill founded the case would plainly be one

> "heretofore made final in the Court of Appeals" (Sec. 234 of code D. C.).

> "In any legal sense, action, suit and cause are convertible terms" (*Ex parte* Milligan, 4 Wallace, 3, 112).

Suit is

> "any proceeding in a court of justice by which an individual pursues that remedy which the law affords him" (Same case, page 113, quoting from Weston vs. City Council of Charleston, 2 Peters, 449).

It is

> "the prosecution of some demand in a court of justice" (same page, quoting Cohens vs. Virginia, 6 Wheaton, 264).

Suits may arise out of appeals from administrative officers. Bradley vs. People in 4 Wallace, 459, for example, was brought into this court by writ of error to the Supreme Court of Illinois to which appeal had been taken from a board of supervisors.

The Court of Appeals, D. C., exercises functions strictly judicial in reviewing on appeal the decisions of the Commissioner of Patents (United States vs. Duell, 172 U. S., 576).

The points involved in the present case and covered by the assignments of error (Record, pp. 93 to 96) can be restated as follows:

The Patent Office tribunals denied to applicant (appellant, plaintiff in error and petitioner)

> "the right to retain claim 1 with the apparatus claims" (Record, lines 33 and 34 of page 89).

in the same application; and the Court of Appeals, D. C., affirmed the denial, in apparent reliance, in part at least, upon rule 41 of the Patent Office, which is quoted in the opinion of the Court of Appeals (Record, lines 10 to 13 of page 89).

The first matter for consideration is, therefore, whether the process of applicant's said claim 1 and the apparatus of his claims 4, 5, 6, can or can not under the provisions of rule 41 of the Patent Office be claimed in the present application.

If it should be held that they can be so claimed, it will only (if at all) be necessary to consider whether the provisions of said rule allowing the joinder are or are not invalid as a restriction on the statutory powers of the Patent Office tribunals to reject for misjoinder of causes; but if it should be held that the rule makes separate applications necessary, it will then be in order to consider whether said rule is or is not invalid under the acts of Congress as a denial to applicants of a statutory right to protect in one patent inventions not permitted by said rule to be claimed in the same application.

If the rule should be held valid under the acts of Congress, it will then be necessary to inquire whether such acts are or are not within the constitutional powers of Congress. While, on the other hand, if the rule should be held invalid for either of the reasons referred to above, it will be necessary to consider first whether the statute authorizes the protection of said process and apparatus in the present application over objection thereto by the Patent Office on the grounds stated in the record, and to discuss the constitutional powers of Congress only in the event that said process and said apparatus can not be thus protected under the statutes.

And in considering this question under the statutes the first consideration is whether the Commissioner's grounds of objection do or do not constitute a statutory reason of rejection.

If it should be held that they do not, the objection, of course, falls for want of authority to make it. If it should be held that they do, then it will be necessary to consider

whether the objection is or is not well founded upon the statute and the facts.

If it should be held ill founded thereon, the objection, of course, falls for that reason, but if it should be held well founded thereon, then it will be necessary to consider whether Congress is empowered by the Constitution of the United States to make the enactments which constitute the supposed statutory foundation for the objection.

Petitions for certiorari are not uncommon in cases where the record has been brought up on appeal or error. Such a petition was received by this Court in United States vs. Allen, case 383, October Term, 1903; although it was subsequently held that the court had jurisdiction on the writ of error (C. D., 1904, 703, 708; 192 U. S., 543). The case of H. C. Payne, Postmaster-General, No. 628, October Term, 1902, was cited by petitioner (plaintiff in error) in case 383. And see also Security Trust Co. vs. Dent, 187 U. S., 237, 239; Barton vs. United States, 196 U. S., 283, 295, and Whitney vs. Dick, 202 U. S., 132, 134.

The reason for allowing certiorari, in case jurisdiction in this case on appeal or error should be denied by the court, is to be found in the nature of the questions involved and their general and wide interest, particularly to inventors.

> "Patentees are a meritorious class, and all the aid and protection which the law allows, this court will cheerfully give them (Commissioner of Patents vs. Whitely, 4 Wallace, 522, 532).

It is highly important to know whether this court can or can not upon direct proceedings review the decisions of the Court of Appeals, D. C., on appeals from the Commissioner of Patents.

It is also highly important to know what are the limitations on the powers of the Commissioner in respect to the

division of applications. That they are not unlimited was held in United States vs. Allen, above.

It is also highly important to know the rights which inventors have under the ruling of this court that

> "the statute gives the right to join inventions in one application in cases where the inventions are related" (United States vs. Allen, C. D., 1904, 703, 712; 192 U. S., 543).

This right is understood to exist whenever the inventions are

> "connected in their design and operation" (quoted on page 710 of C. D., 1904, from Hogg vs. Emerson, 11 How., 587);

which, in the case of process and apparatus, is at the least whenever they are, respectively, for

> "the art described, and the means of making it useful" (page 711 of C. D., 1904),

as in Bell's case, or whenever the statute (Secs. 4888 and 4920, R. S.) puts upon an inventor the duty of

> "disclosing the apparatus in his application for a process" (page 712 of C. D., 1904).

The Patent Office admits that under the court's rulings an applicant may have a right to join a process and an apparatus

> "if it be a fact that this machine and this art are one unitary invention" (Record, p. 60);

but it is

> "unable to find anywhere in the decision any test" (Record, p. 61).

for rejoinder and finds itself

> "compelled to ascertain the proper test or tests without aid from the decision" (Record, p. 61).

The quotations from pages 60 and 61 of the record occur in the majority opinion of the Examiners-in-Chief; but the Court of Appeals, by Mr. Justice Duell, refers to it as the Board's

> "very elaborate and able opinion, in which they recognize to the fullest extent the rule laid down by the Supreme Court" (Record, lines 15 and 16 of page 89).

To applicant, on the contrary, the decisions in the Patent Office and Court of Appeals, D. C., by failing to find and apply the test of

> "connection in their design and operation"

in accordance with the statute as construed by this court, seem to be in flat contradiction to this court's rulings in the Steinmetz (United States vs. Allen) and the Frasch cases (192 U. S., 543 and 566, respectively).

I.

The fundamental doctrine of the decisions below in this case is radically erroneous.

The Commissioner said, and the Court of Appeals has adopted his statement, that

> "it is very clear, however, that the process may be performed without using the particular apparatus disclosed and that the particular apparatus may be used without performing the process. Neither, therefore, depends upon the other." (Record, p. 81 and p. 90, at bottom of each page).

This statement either makes, on the one hand, a capacity or an incapacity for separate use a test of independence or of dependence of inventions generally with respect one to another; or else, on the other hand, it sets forth a special test for process and apparatus not applicable to inventions in general.

Under either construction, it is contrary to the rulings of this court.

> "While it is sometimes said that each claim of a patent is a separate patent, it is true only to a limited extent. Doubtless separate defenses may be interposed to different claims, and some may be held to be good and others bad; but it might lead to very great confusion to permit a patentee to split up his title within the same territory into as many parts as there are claims." (Pope Mfg. Co. vs. Gormully & Jeffery, 144 U. S., 248, 252).

> "We have just held in United States ex rel. Steinmetz vs. Allen, Commissioner of Patents, that Rule 41 of the Patent Office, in so far as it requires a division between claims for a process and claims for an apparatus, if they are related and dependent inventions, is invalid. (Ex parte Frasch, 192 U. S., 566).

The claims had in mind by the court, some of which might be held to be good and others bad, would naturally be for matters capable of separate use; since the most ordinary defenses are those of anticipation and lack of infringement. And this court gave the same test of dependence or inde-

pendence for process and apparatus which it held applicable to inventions generally.

"There is nothing in the language of the section which necessarily precludes the joinder of two or more inventions in the same application. But the section does distinguish inventions into arts (processes), machines, manufactures and compositions of matter, and the earliest construction of the law denied the right of joinder. An exception, however, came to be made in cases of dependent and related inventions."

* * * * * * * * *

"Mr. Justice Story, in Wyeth vs. Stone, said:

"For, if different inventions might be joined in the same patent for entirely different purposes and objects, the patentee would be at liberty to join as many as he might choose, at his own mere pleasure, in one patent, which seems to be inconsistent with the language of the patent acts, which speak of the thing patented, and not of the things patented, and of a patent for an invention, and not of a patent for inventions; and they direct a specific sum to be paid for each patent.

"But he confined the requirement to independent inventions, and his illustrations indicated that he meant by independent inventions not those which, though distinct, were for the same common purpose and auxiliary to the same common end.

* * * * * * * * *

"Can it be said that a process and an apparatus are inevitably so independent as never to be connected in their design and operation? They may be completely independent. (Cochrane vs. Deener, 94 U. S., 780). But they may be related. They may approach each other so nearly that it will be difficult to distinguish the process from the function of the apparatus. In such case the apparatus would be the dominant thing. But the dominance may be reversed and the process carry an exclusive right, no matter what apparatus may be

devised to perform it. There is an illustration in the Telephone Cases (126, U. S., 1). The claim passed upon in those cases was as follows:

"The method of, and apparatus for, transmitting vocal or other sounds telegraphically, as herein described, by causing electrical undulations similar in form to the vibrations of the air accompanying the said vocal or other sounds, substantially as set forth.

"The claim was held to the art described, and the means of making it useful. The court observed:

"The other inventors may compete with him for the ways of giving effect to the discovery; but the new art he has found will belong to him and those claiming under him during the life of his patent.

"A distinction between the process and the means employed for using it was recognized. It was said:

"The patent for the art does not necessarily involve a patent for the particular means employed for using it. Indeed, the mention of any means in the specification or descriptive portion of the patent is only necessary to show that the art can be used, for it is only useful arts—arts which may be used to advantage—that can be made the subject of a patent.

"The patent was sustained. It was not attacked because it embraced independent inventions. The fact is not without force. Considering the ability of counsel engaged and the division of the court in opinion, it is a proper inference that no tenable objection to the patent was overlooked." (United States vs. Allen, 192 U. S., 543).

"A patentable invention is a mental result. It must be new and shown to be of practical utility. Everything within the domain of the conception belongs to

> him who conceived it. The machine, process or product is but its material reflex and embodiment." (Smith vs. Nichols, 21 Wallace, 112, 118).

But a given "machine, process or product" may reflect and embody more than one "mental result" or "conception"; and the so embodied results or conceptions will in many cases (will ordinarily, in fact) be capable of separate embodiment and use. The decision of this court in Miller vs. Eagle is authority for the proposition that all claims which may be exhibited in the same "material reflex and embodiment" not only may but must (if made at all) be joined in one patent.

> "This conclusion is no way affected by the reservation attempted to be made in the 1879 patent, of the 'broad idea of a lifting spring which acts with increasing force as the beam rises', for the reason that the broad idea sought to be reserved is embodied in identically the same mechanical device constituting the invention and covered by the first patent, which completely occupies all the ground that was reserved" (151 U. S., 186, 201).

Yet to the conception in said first patent as claimed it was not indispensable that there should be "increasing force as the beam rises." The indispensable feature of the said first patent was a spring

> "constructed and arranged to pass a center or dead point as the beam moves vertically, and in passing said point cease or change the direction of its action on the beam" (from claim 6 of 1879 patent as quoted in decision).

Inasmuch, however, as these two different conceptions were "shown to be of practical utility" by the same "ma-

terial reflex and embodiment," they could not be claimed in separate patents, although these were granted on concurrently pending applications.

The Commissioners of Patents with practical unanimity have allowed the joinder of claims where sameness of embodiment exists; notwithstanding differences of "mental result" and notwithstanding a capacity for separate embodiment and use.

> "The applicant describes a new genus, to wit, a box provided with a follower He may fairly describe several species of this genus, and may make any claim that is generic in its character and includes them all. In addition to this, as the genus can only be illustrated by at least one of its species, he may select one of the embodiments of his invention for specific claims; but he cannot found one claim on one species, and a second on another, a third on another, and so on" (case of R. N. Eagle, Decisions of the Commissioner of Patents for 1870, page 1372, Samuel S. Fisher, Commissioner).

When an applicant shall have selected

> "one of them as the preferred species for the illustration of his invention in all its parts, * * he may found upon that any specific claim that is applicable to it." (Same case).

Hereinafter in this brief the volumes of the Decisions of the Commissioner of Patents, which volumes after 1875 include court cases also, will be referred to by letters C. D. followed by the year and the page numbers.

Under the express ruling in the R. N. Eagle case the patentee in Miller vs. Eagle could have joined a claim to a spring embodying the increased lifting force idea (as the "genus") with a claim to a spring embodying both sets of

ideas (as the "preferred species"); and by parity of reasoning he could have had a third claim broadly to a spring embodying the idea of a cessation or a change in the direction of its action in passing a certain point; because in each specification (that of the 1881 patent, as well as that of his 1879 patent) the patentee disclosed as the

> "preferred species for the illustration of his invention in all its parts" (C. D., 1870, 137, as above)

a mechanism on which all three claims might be founded.

The distinction in the R. N. Eagle decision is not between claims to different "genera" (broader ideas) exhibited in the same "species," but between claims to different embodiments or "species." Thus the decision states that

> "the applicant cannot proceed to found a claim upon a follower composed of wire cloth, and another upon a follower formed of perforated tin, etc. These are independent improvements in the species of the genus, and must be claimed in separate applications" (C. D., 1870, 137 as above).

The idea, however, that a patentee can claim different "species of the genus" only in separate patents has been condemned by the courts of at least one circuit (2d circuit). Thus it is said:

> "The second patent shows the same cluster unit, the same cover and the same openings [illegible]ulating bushing having taken the place of air spaces. In view of this the circuit court held that 'it is very doubtful whether the second patent is not to be regarded as invalid because anticipated by the first patent. * * * As I understand the rule the patent numbered first takes precedence of the other.'
>
> "This is a correct statement of the general rule, defendants citing Underwood vs. Gerber (149 U. S.,

224); Writing Machine Co. vs. Elliott & Hatch Book-Typewriter (106 F. R., 507); Wilcox & Gibbs S. M. Co. (93 F. R., 206); and Crown Cork & Seal Co. vs. Standard S. Co. (136 F. R., 841). But where the patentee has had an application pending for the allowance of the later numbered patent at the time when the earlier-numbered patent was issued; and especially when it was through no fault of his that his original application for a single patent was split up and a plurality of patents issued, an exception is made to the enforcement of this rule. Electrical Co. vs. Brush Co. (52 F. R., 137); Thomson-Houston El. Co. vs. Elmira & H. R. Co. (71 F. R., 404); Independent Electric Co. vs. Jeffery Mfg. Co. (76 F. R., 989). As was stated in Badische Anilin Co. vs. Klipstein (125 F. R., 554): 'It would be a failure of justice if the patentee of a meritorious invention should be deprived of the fruit of his labors because an arbitrary rule of the Patent Office has brought about complications not contemplated.' This case is a striking example of the unfortunate result of too close adherence to rule. Benjamin came to the Patent Office with a meritorious invention,—a simple one which was quite sufficiently described in a brief specification. The specification and the drawings showed his cluster-unit, by itself and also made practically a commercial article by the use of a cover and a switch, varieties of cover with and without bushing being shown. He asked for seven claims. The logical way would have been to include the genus and its varieties in the same patent, and half a dozen claims would have covered every possible combination which he was entitled to hold. But by the time the Patent Office got through with him, Benjamin was the holder of four separate patents granted upon divisional applications split off from his original one, the four patents containing together ninety-eight claims. It does not seem just that the patentee, who was powerless to obtain any modification of the rule for dividing applications, should be made to suffer from such misdirected energy. There seems sufficient authority to warrant a construction, which will

> hold that these two patents, based on a single original application and issued on the same day are to be treated as a single one, containing the five claims above quoted." (Benjamin Electric Mfg. Co. vs. Dale Co. et al., decided November 13, 1907, by C. C. A. for 2d Circuit. No. 10, October Term 1907).

Divisional reissues for different forms ("species") of the same general device ("genus") were sustained by this court in Bennett vs. Fowler, 8 Wallace, 445, and by the Circuit Court for Southern District of New York in Selden vs. Stockwell, etc., Co., C. D., 1881, 431; see page 437 at bottom; but unless separate claims to two or more forms are properly to be joined in the same original patent, it may be argued that they could not be claimed on reissue, either in divisions or otherwise; and this seems to have been the ruling of Commissioner Paine in McClintock's case, C. D., 1880, 41, see page 50.

In Underwood vs. Gerber, the Circuit Court for the Southern District of New York refers to this—

> "novel method of manifolding an invention * * * in order to comply with recent decisions of the Patent Office interpreting Rule 41 of that Office, and holding that where a person has 'invented something in an art, or, as it is ordinarily called, "a process," also a machine for carrying out the process, and also the manufacture or article which is produced in the operation of the process by the machine' he must take out three separate patents—one for the process, one for the machine, and one for the product. Before these decisions the patent would have contained the common specification * * * with two separate claims—one for the process and resulting composition, the other for its combination with the paper." (37 Fed. Rep., 682.)

The decision in R. N. Eagle has been followed in all points with practical unanimity by subsequent Commissioners.

"The inventions covered by a generic and specific claim are distinct, although dependent inventions. The only ground on which one specific claim can be joined in the same patent with a generic claim is that the applicant, in order to support his generic claim, must describe some one of the species, and may claim what he must describe" (case of McClintock, C. D., 1880, 47, 50, Halbert E. Paine, Commissioner).

"In no case can there be more than one patent for one thing. There can be no two valid co-existing patents upon the same invention. The practice which has recently sprung up in the Patent Office, or has been revived, of allowing claims to specific devices, claims to *species* to be patented while the generic claim upon the same species, the claim to the *genus*, is in controversy and withheld as on a denial of its patentability, or on right to the claim being contested, or for other reasons, can not too emphatically be condemned. Aside from the absurdity of attempting to separate the law or principle from its first illustration, and claiming its broad embodiment in another case, and in a second case too, as though a subsequent thing, a second patent with a claim to subject-matter which comprehends the claim of a previous patent has been held void as being met in such previous patent. This has been held, as shown, even where in the subsequent patent the illustration of the generic claim was by a different species from that displayed in the previous patent. Where, however, the self same species displayed in the previous patent is the illustration of the subsequent case, the only difference between the cases being that the first case has a specific claim, while the second has a generic claim, there can be no possible question, for in such case the division is purely imaginary, it is intangible; there is none in fact" (case of Holt, C. D., 1884, 43, 59-60, Robert G. Dyrenforth, Acting Commissioner).

"Where the invention is one, integral and indivisible, whether it relates to different parts of a single organiza-

tion or combination, or process and product, or genus and species, a prior patent which claims or covers part of the whole invention, in legal contemplation, takes the whole invention out of the field of patentability, whether the subsequent applicant be the original patentee or some other person" (case of Roberts, C. D., 1887, 61, 64; Benton J. Hall, Commissioner).

"1. Cases where the various claims differ among themselves only as they constitute different statements of one and the same indivisible invention—cases where in other words, the lines of division exist as mental figments only and have no corresponding existence in the concrete subject of invention. In all such cases one application only is permissible, whether pending concurrently or not, because only one patent can be granted for a single invention and a second patent for the same invention in another guise would result inevitably in an illegal extension of the period of exclusive use" (case of Mullen and Mullen, C. D., 1890, 9, 10, Charles E. Mitchell, Commissioner).

"When a set of claims, as in this case, can be based upon one specific product, I can see no reason why they should not be permitted to remain in the same application. Claims so drawn are in accordance with the doctrine of genus and species" (case of Gassmann, C. D., 1900, 20, 21-22, Charles H. Duell, Commissioner).

"The real difficulty seems to lie in the manner in which the applicant has illustrated his invention. Since he wishes to claim the general combination and the specific form of some of the elements, he should have included the preferred form of the elements in the figure of the drawings illustrating the combination which he wishes to claim" (case of Welch, C. D., 1900, 190, 192, Walter H. Chamberlin, Assistant Commissioner).

"Claims 1 and 3 cover, broadly, the holding means for the clamping rods shown in all its forms. Claim 2 covers the specific holding means shown in Figs. 4

> to 7, inclusive. * * * Claim 2, and also claim 1, cover subcombinations of the combination covered by claim 3 * * * the requirement of division should not be made" (case of Shevill et al., C. D., 1902, 469, 470, Frederick I. Allen, Commissioner).

In all these cases of "genus and species," of "the law or principle and its first illustration," of "mental figments and concrete subjects of invention," the published decisions of the Commissioners (and no doubt those unpublished as well) have been uniform in allowing joinder. No Commissioner has prescribed that, in such cases, the claims must be incapable of separate use. Such a test would require division in every case where the "genus" could be illustrated by two or more "species"; since it can not be said that either of the latter (considered by itself) is indispensable to an employment of the former.

But the right to join in one application claims exhibited in separate embodiments, capable of separate use, has also uniformly been allowed where the claims cover the elements of a combination or the elements and sub-combinations of a larger combination; except that some Commissioners (not all) have restricted the right by distinctions based on the prior state of the art or on the official classification at the Patent Office, or on both. No court has suggested such distinctions.

> "More than one patent may be included in one suit and more than one invention may be secured in the same patent, in which case the several defenses may be made to each patent in suit and to each invention included in the bill of complaint. Gill vs. Wells, 22 Wall., 24.
>
> 'Combination patents may be mentioned as examples where more than one invention may be secured by a single patent, and in such a case the patentee may give the description of each combination in one specification" (Bates vs. Coe, 98 U. S., 31, 48).

"Cases arise where a patentee having invented a new and useful combination, consisting of several elements, which in combination compose an organized machine, also claims to have invented new and useful inventions, consisting of fewer members of the same elements, and in such cases the law is well settled that, if the several combinations are new and useful, and will severally produce new and useful results, the inventor is entitled to a patent for the several combinations, provided he complies with the requirements of the patent act, and files in the Patent Office a written description of each of the alleged new and useful combinations, and of the manner of making, constructing, and using the several inventions. He may, if he sees fit, give the description of the several combinations in one specification, and in that event he can secure the full benefit of the exclusive right to each of the several inventions by separate claims, referring to the specification for the description of the inventions, without the necessity of filing separate applications for each of the inventions." (Stevens vs. Pritchard, C. D., 1876, 489, U. S. Circuit Court for District of Massachusetts by Justice Clifford, who subsequently wrote the opinion of the court in Bates vs. Coe, 98 U. S., 31, 48, as above).

"Applicant has claimed it separately with every part which may be benefited by its employment, and if it is a proper subject of combination no doubt it may be united severally with such elements, forming as many claims as there are new groups of co-operative parts" (case of Thorne, C. D., 1869, 76, Samuel S. Fisher, Commissioner).

"Applicant presents two claims—the first for a draft hook of peculiar construction 'as a new article of manufacture,' and the second for what may be construed as a combination of this hook with several other devices.

"The Examiner refuses to consider both claims in the same application, taking the broad ground that 'an article of manufacture' must be covered as an entirety

by a single claim and that no other claim can be entertained in the same application.

* * * * * * * * * *

"Suppose the words 'article of manufacture' stricken from the first claim in this application and the device claimed simply as a draft-hook, the nature of the invention and the character of the claim would not be changed in the least; but no one would then think of objecting to the second claim because the hook had been claimed as an entirety in the first" (case of Adams, C. D., 1873, 18-19, John M. Thatcher, Acting Commissioner).

"In the present instance all of the elements of the apparatus are to be used conjointly for a definite and single purpose * * * objections to uniting the claims in this application are overruled" (case of Westenhaven and Adair, C. D., 1874, 58, M. D. Leggett, Commissioner).

"The rule to be observed in the division of applications has very recently been reiterated in the case of Noyes (8 Official Gazette, 818) coming from the same class as the present one. The general doctrine is there stated to be that where the devices are used in connection to subserve a common end, or adapted to each other, all co-operating to produce a given result, although each device, when considered by itself, may amount to a new invention, yet when so combined, they constitute an exception to the general rule, that separate inventions should form the subjects of separate applications" (case of Jopling, C. D., 1875, 153, R. H. Duell, Commissioner).

"But this division would leave out the essential feature—that is to say, the combination of the trimmer and the plate, which following out logically this idea, should be the subject of a third application. But if this combination of the trimmer and the mechanism for moving the cloth laterally is an invention, then the other subordinate constructions and combinations—improve-

ments upon the two elements of this combination—may be considered as parts of the same invention" (case of Bigelow, C. D., 1878, 65, 66, Ellis Spear, Commissioner).

"In like manner either or both of these sub-processes may be joined as separate claims in one application with a claim for the entire process. They are not species embraced in the entire process as a genus, but they are sub-processes, yielding results which are at once distinct from each other and subsidiary to the main result.

"The joinder of these claims in one application would be warranted by common sense, if not by the law and the rules. But it is warranted by the law and the rules also; for distinct inventions may be joined in one application, if they are dependent upon each other and mutually contribute to the accomplishment of the main result. No other connection between distinct inventions warrants their joinder in one application. The mere circumstance that they pertain to the same subject amounts to nothing if they do not both contribute to the production of the same result or effect" (case of G. H. Smith, C. D., 1879, Halbert E. Paine, Commissioner).

"If all the parts of a device properly combine to make a single merchantable article of manufacture, it is not required that several patents be taken out for that article because its separate elements are capable of use independently of the others and for different purposes" (case of H. E. Smith, C. D., 1880, 51, 52, W. H. Doolittle, Acting Commissioner).

"All the parts of the machine which co-operate, whether simultaneously or consecutively, to produce a single effect or result may lawfully be combined in one patent" (case of Cauhape, C. D., 1880, 52, H. E. Paine, Commissioner).

"Each of the several 'acts' of 'the series of acts' con-

stituting the process may be capable of performing separately its own peculiar function, and may be used independently of the others; but if together they coact in producing the final result they may be joined in a single application. In such a case a claim can be made to the process as an entirety, and separate claims can also be made to the sub-processes which go to make up the same. So, also, where one has discovered that a desired result can be attained by a process consisting of a series of steps or acts, and that certain of the steps in such process may be replaced by others which will operate in an equivalent manner in attaining the same end, these several modifications can be embraced in one application, for they can not be regarded as distinct inventions. In such case the applicant would be entitled to a broad or generic claim, which would include all the modifications, and would also be allowed to claim separately any one of these modifications or species.

"The above is the practice indicated by my predecessor in the case of *ex parte* Smith (16 O. G., 630), and is consistent with that uniformly adopted in regard to applications for patents for improvements in machinery, and I see no reason why the same should not be followed in both classes of cases (case of McDougall, C. D., 1880, 147, 149, E. M. Marble, Commissioner).

"No good reason is seen why the doctrine as to joinder of invention which is announced as governing the other classes is not equally applicable to 'compositions of matter.' A party may make a 'composition' containing a certain number of ingredients, all of which enter into and form part of the complete compound, and aid in making its operation perfect for the purpose intended, and yet a substance containing a less number of ingredients may constitute the essence of the invention and contribute most largely in producing the desired result. It is manifest that to fully protect the interests of the inventor several claims would be required, and it would be a hardship to compel him to file separate applications to cover each claim of what is in reality

a single complete invention. The statute does not require it, the decisions of the courts do not require it, the practice of the Office in regard to the other classes of invention does not afford a precedent for, nor does the convenience of the Office require it, so long as the several distinct things are not differently classified" (case of Hentz, 6, 8, Benjamin Butterworth, Commissioner).

"It has always been the practice of the Office that when a combination exists and any of the elements are new and patentable, the patent may embrace a claim for the combination and claims for the specific parts. * * * But this proposition must be still modified by the proviso that such parts have not become recognized and identified in the arts and industries as separate and distinct subjects in well recognized classes" (case of Herr, C. D., 1887, 105, 124-125, Benton J. Hall, Commissioner).

"The invention in question is an implement for turfing fabrics, and all the claims, except the tenth, eleventh, and twelfth, which embrace the specific construction of the needle, cover the various parts of the implement in combination with such needle.

"The Examiner holds that this needle is an invention separate and distinct from the implement, and is therefore not capable of standing in the same application with it. In this the Examiner is in error. The application covers but one improvement in turfing-machines instead of two. The needle is just as much a part of the implement as the crank which drives it or the open presser-foot with which it co-operates. It is not an invention independent of the devices with which it is used, but one actually depending upon and acting with them to produce a single result. This brings the case clearly within Rule 41, without regard to the consideration whether or not the needle might not finally be placed in a different class from the implement itself without the needle. To hold otherwise would sanction the dismemberment of the entire machine merely for the sake of

making applicant conform to an arbitrary classification existing mainly for the convenience of the Patent Office.

"Division should not be required in this case, and the prayer of the petition is granted" (case of Coe, C. D., 1889, 191, 192, Robert J. Fisher, Jr., Assistant Commissioner).

"It is true that some of the other claims are limited to the feeding devices; but the question of division as to such claims also turns upon the question whether the claim involving both the printing devices and the feeding devices are patentable, because it has been repeatedly held that where the combination is legitimate, the elements and sub-combinations may be claimed in the same application, unless they have acquired a definite status in the arts, industries, and trade—that is to say, pertain to and are improvements upon parts or devices which have acquired such status" (case of Speckbauch, C. D., 1891, 36, 40, Charles E. Mitchell, Commissioner).

"The practice is well settled that in cases where there are claims which severally cover substantially the whole mechanism comprised by the invention, or a combination of several partially-independent but co-operating parts of the same, and other claims, each covering a part or sub-mechanism, division will not be required unless the particular part or sub-mechanism in question is capable of use in other relations and has acquired a distinct status in the arts, manufactures, and trades. (See *ex parte* Wilcox and Borton, C. D., 1888, 144, and *ex parte* Speckbauch, C. D., 1891, 36; 54 O. G., 1265). It does not appear that any one of the parts or sub-mechanisms claimed in this case is capable of use in other relations and has acquired a distinct status in the arts, manufactures, and trades. In each of the cases cited by the Examiner in his statement, except *ex parte* Speckbauch, *supra,* the separate inventions claimed either had the status referred to above or there were no elements common to the several combinations covered by the claims under consideration, and no claims covering substan-

tially the whole mechanism. If the combinations presented by the claims in the present case are legitimate, there is no valid reason for requiring division" (case of Hine, C. D., 1892, 11, 12, William E. Simonds, Commissioner).

"While there are more inventions than one in this application, it does not appear that they are independent. The bundle-carrier does not act as a mere bundle-carrier, nor does the hoisting and conveying mechanism act merely as such. The two co-operate to charge the sugar-mill with uniformity. All the parts relate to the same subject-matter and co-operate toward one end.

"Again, there appears to be a likelihood that the consideration of the case on its merits may clear the application of the objection, as presented by the Examiner, that it is multiform. From this point of view the requirement to divide might be safely postponed.

"I prefer, however, to dispose of the case upon the grounds presented by the Examiner, which appear to be that sub-classes have acquired a distinct place in the arts to which the several parts of this application would go. These correspond to the sub-classes in the Office and in the division from which this petition comes. This in itself presents no ground for a requirement to divide. It is therefore set aside" (case of Carr, C. D., 1894, 11, John S. Seymour, Commissioner).

"An examination of claims 4, 5 and 6 shows that they include in one process the steps of weaving stated by claims 1, 2 and 3, and the steps of winding yarn stated by claims 7, 8, 9, and 10. If claims 4, 5, and 6 are for a legitimate combination, all of these claims should be included in one application. If, on the other hand, these claims are not for such a combination, they should be rejected for aggregations, and if the applicants acquiesce in this rejection or the Examiner's action is sustained on appeal claims 1, 2, and 3 should be made the subject of one application and claims 7, 8, 9, and 10 of another" (case of Tymeson and Borland,

C. D., 1898, 48 and 49, Charles H. Duell, Commissioner).

"This is a petition from that part of the Examiner's action requiring division between claims 1, 2, and 3, which cover a stitch-forming mechanism, and claims 4, 5, and 6, which cover a combined awl and feeding mechanism.

"The invention relates to improvements in a shoe-sewing machine for sewing welts to the uppers and insoles of shoes.

"The stitch-forming mechanism and the combined awl and feeding mechanism, though independently operated by a common cam, are so related to each other that they cooperate to produce a unitary result. While it may be true, as the Examiner contends, that any other awl and feeding mechanism might be substituted for the one invented by the petitioner and that any other known or unknown stitch-forming mechanism might be substituted for the one here disclosed and claimed, it does not appear that a stitch-forming mechanism and an awl and feeding mechanism have acquired a distinct and independent place in the arts and manufactures and are independently manufactured and sold.

"They are not separately classified by the Office. It is true that each of these mechanisms is separately constructed and either one of them can be removed from the machine without disturbing the other; nevertheless each one so co-acts with the other as to mutually contribute to produce a unitary result, and in view of the further fact that they are not recognized by the inventors and manufacturers as having a distinct place in the arts and manufactures, in that they are not separately manufactured and sold the requirement of division should not be insisted upon.

"The petition is granted" (case of Eugene Smith, C. D., 1902, 196 and 197, F. I. Allen, Commissioner).

All of the decisions have allowed joinder of a single combination, its sub-combinations and elements, when these per-

tain to the same official sub-class. None of them applies the test of an incapacity for separate use in such cases.

A number of Commissioners have allowed joinder in the same application of claims to different improvements in the same process, the same machine or the same product; although such process, machine or product may involve many parts and also although the improvements may not bear to one another the relation of "genus and species" or of components in a single patentable combination.

> "In the case now under consideration, if Sumner had invented the serrated cutting edge only, he might, beyond question, have claimed the post-hole digger with this improvement applied as 'an improved article of manufacture.' The same, too, may be said with reference to the diagonal slit and to the vertical arms. If this be so, then the only possible objection to considering the three claims in a single application is that they may be regarded as covering three different inventions. The Examiner plainly intimates this objection in making reference to rule 12, which forbids the incorporation of two or more distinct inventions in the same application. This rule was never intended as going to the extent of requiring that all features of invention, which might be claimed as separate improvements, should necessarily be made the subject of separate applications.
>
> "Whether given improvements relating to a particular machine or article of manufacture shall be embraced in one or more patents is often a perplexing question, and one that must necessarily be left to the discretion of the Commissioner. No more definite rule can be established than that laid down in *ex parte* Linus Yale, Jr. (Commissioner's Decisions, 1869, p. 110), to the effect that 'when two or more distinct inventions are united in one application, that are capable of division, and which belong to different classes or involve a double labor of examination, or have no community of operation, it is not only the right but it becomes the duty of the Commissioner to require the application to be divided.'

"While in the present case the various improvements are not so related to each other that the functions of the one can not be brought into full play without the co-operation of the others, yet there is no such classification of inventions in the Office as would bring the several improvements under different sub-classes. Inasmuch, therefore, as their union in a single application does not impose upon the Office any extra labor of examination, this course may properly be permitted, and the application now pending will be proceeded with" (case of Sumner, C. D., 1871, 180, 181 and 182, Samuel A. Duncan, Acting Commissioner).

"Now, the 'necessary connection' to which the rule and the decisions of the court and the Office have reference is not the relation which each part bears to another denominationally, as whether each belongs to the same class of machinery (the classification in these cases being an arbitrary one, established by the Office for its convenience), but what relation or connection each part bears to the other in producing the complete invention, the entire operation, machine, article, or improvement thereon.

"Inventors have the whole field of mechanics from which to select their materials, and it makes no difference how essentially different in nature each element may be if the chosen assemblage is novel and produces a useful result.

"At first glance it would appear that the devices set forth in the claims in question related alone to the construction and improvement of the pitman and journal-box, and had but a remote connection, if any, to the other parts of the machine, and but indirectly affected their operation.

"But when the difficulties which applicant proposes to overcome are considered, it will be seen, I think, that the co-operation of these parts is necessary to that end. At least, if there is any doubt on that point, the applicant should have the benefit of it.

* * * * * * * * * *

"The great inconvenience and confusion which the

Examiner apprehends will arise from this decision may be obviated, in cases like the present one, by the Examiners furnishing to other classes duplicate drawings of those parts, which, if made the subjects of separate applications, would properly belong to such other classes" (case of Clinton and Knowlton, C. D., 1876, 30, 33 and 34, R. H. Duell, Commissioner).

"Suppose, for instance, a novel, useful, and valuable machine is invented, such a one as has never been before heard of; it involves various mechanical contrivances and various combinations of mechanical elements; applicant obtains a patent for this machine and goes away; a year thereafter he comes back asking for another patent for his improved machine. During such year he has conceived and perfected a dozen important improvements, each and all tending to the renovation, correction, and improvement in the working of his machine. He asks for a patent for such improvements. Except in very exceptional cases it would be, in my judgment, unjust and improper to require him to file eleven different applications" (case of Young, C. D., 1885, 108, 111, M. V. Montgomery, Commissioner).

"The invention described and claimed in this application is a lamp for the use of photographers. The oil reservoir is so constructed that when it is desired to use the lamp a sufficiency of oil may be supplied to the wick; but when not in use the oil is absorbed, so that the lamp may be safely packed and transported without danger of leakage. The lamp is also adapted to be used either for ordinary purposes or, when supplied with a ruby chimney, in the photographer's dark room. Attached to the lamp is an apparatus by which a spray of magnesium may be fed to the flame for use in the production of flash-light photographs.

"It will be seen from this brief description of the lamp that it is one especially designed and adapted for the several usages desired by photographers, and as such constitutes a unitary invention. All the several

parts may therefore be included in the same application" (case of Jljinsky, C. D., 1889, 192 and 193, Robert J. Fisher, Jr., Acting Commissioner).

"Against the requirement of division applicant argues that heretofore it has been the practice of the Office to allow all parts and connections of a dental chair to be claimed in one application should applicant so elect and that 'where the practice of the Office is settled it should be followed unless there are very good reasons for changing it.' While it is true that it has been the practice of the Office to permit an applicant to claim all parts of a dental chair in one application, there is good reason why this practice should be discontinued. Owing to the increased number of patents in this Office the field of search is being extended, and while in the cases filed in 1877 and 1879, in which division was not required, this question may not have been of importance it is so considered now" (case of Wilkerson, C. D., 1899, 71, 75, Charles H. Duell, Commissioner).

"Claims 1 to 14, inclusive, and claims 17 and 18, though drawn to cover 'several distinct inventions,' are held to cover inventions so 'dependent upon each other' that they 'mutually contribute to produce a single result,' and therefore may under the provisions of Rule 41 be claimed in one application.

"This single result is the construction of a complete railway block system with the end in view of preventing accidents to the cars by collisions and drawbridge casualties in the operation of that complete system. The 'siding' is in effect a part of the trackage of the system, and the drawbridge is in fact a portion of the main trackage. The portions of the invention relating to the siding and draw-bridge have not assumed a separate and distinct place in the arts. They are not so recognized by inventors and manufacturers and by the Office in its scheme of classification, as is the case with the various parts which go to make up a complete printing-press, which has been referred to by the Examiner in his statement.

"The whole scheme of the invention defined in the claims above mentioned is to so construct a block system in connection with an electric railway and to so control the cars in use on said railway as to prevent accidents to them by collision with each other or to prevent the loss or destruction of the cars by reason of a break in the trackage due to an open draw-bridge or mispiaced switch" (case of Kintner, C. D., 1902, 22, 23 and 24; Frederick I. Allen, Commissioner).

In thus allowing joinder of inventions, these Commissioners have not exceeded the rulings of the courts on the subject.

"But granted that such is the result (that one set of letters patent may not embrace more than one invention) when two or more inventions are entirely separate and independent—though this is doubtful on principle—yet it is well settled in the case formerly cited that a patent for more than one invention is not void if they are connected in design and operation. * * *

"In Wyeth *et al.* vs. Stone *et al.* (1 Story, 288) in order to render different letters patent necessary, it is said, the inventions must be 'wholly independent of each other, and distinct inventions for unconnected objects,' as one to spin cotton and 'another to make paper.'" (Hogg vs. Emerson, 11 Howard, 587.)

In Morris vs. Barrett it was held—

"competent for a patentee to embrace two improvements on the same machine in the same patent" (1 Fisher, 461).

"The plaintiff's second patent also contains a claim for a feed-cup in connection with the vertical wires of the cage, and it is insisted for the defendants that this invention is independent of the other, and that the patent for both is therefore void. But these inventions are connected together by being appropriate for use in the

same cage for the common purpose of making a bird-cage, and under these circumstances the joinder of both in one patent does not render the patent void. Emerson vs. Hogg, 2 Blatchf. C. C. R., 1; Hogg vs. Emerson, 6 How., 437." (Maxheimer vs. Meyer, 9 Federal Reporter, 460.)

In Sessions vs. Romadka, the U. S. Circuit Court was

"doubtful whether the patentee Taylor could rightfully claim his various inventions in one patent, although they were all designed to be applied to a trunk and related to an improvement in trunks. The patent is for each improvement or device specified in the respective claims. The specification of one is separate and distinct from the other, and each is capable of a separate and independent use. Even if one is in a certain sense auxiliary to the other, it is not indispensable to the use of the other. In fact, there is no connection either in purpose, design, or operation between the several inventions. They are not like a combination of various devices or improvements, all of which make one operative mechanism—one concrete organization. They are all designed for use upon one article—namely, a trunk; but they do not all tend to the accomplishment of a single result further than that all combine generally to improve the trunk. Each is a distinct invention or improvement by itself, and the operation of one has no relation to the operation of the others. Although all may be placed upon the same trunk, each singly has a distinct and appropriate use, and in such use they are unconnected. At best it is a matter of serious doubt whether all the claims of the patentee should have been joined in one patent. The case is one in which it seems to be within the province of the court to permit the patentee and his assigns, if they shall desire so to do, to file in the Patent Office a disclaimer, so as only to claim the invention specified in the third claim of the patent, and I shall dispose of the case by making the filing of such disclaimer a condition upon which the

relief prayed in the bill will be granted" (21 Federal Reporter, 124).

The Supreme Court U. S. said:

"Upon the hearing in the court below, it was claimed the patent was invalid by reason of the joinder of distinct inventions in the same patent—inventions, which though applicable to the same article, viz., a trunk, do not co-operate in the use of such article. The court below was evidently inclined to this opinion, but permitted the plaintiff to enter a disclaimer of all the claims but the one in suit. Whether these different devices were properly embodied in the same patent or not, we think this was a proper case for a disclaimer under section 4917. While the language of this section provides for disclaimers—

"whenever, through inadvertence, accident, or mistake, and without any fraudulent or deceptive intention, a patentee has claimed more than that of which he was the original or first inventor or discoverer,

"it allows the patentee to—

"make disclaimer of such parts of the thing patented as he shall not choose to claim or hold by virtue of the patent or assignment, stating therein the extent of his interest in such patent.

"We think this section broad enough to cover disclaimers made to avoid the effect of having included in the patent more devices than could properly be made the subject of a single patent. The power to disclaim is a beneficial one, and ought not to be denied except where it is resorted to for a fraudulent and deceptive purpose. In Tuck vs. Bramhill (6 Blatch., 95) a disclaimer was allowed by Mr. Justice Blatchford where two or more inventions were covered by a single claim. In Hailes vs. Albany Stove Co. (123 U. S., 582, 587) it was said by Mr. Justice Bradley to be—

"usually and properly employed for the surrender of a separate claim in a patent, or some other distinct and separable matter, which can be exscinded without mutilating or changing what is left standing" (Romadka vs. Sessions, 145 U. S., 29).

A process may constitute the "material reflex and embodiment" of a "patentable invention" (Smith vs. Nichols, 21 Wallace, 112, 118, as above); but machinery is ordinarily necessary to the materialization.

> "Most processes which have been held to be patentable require the aid of mechanism in their practical application" (Risdon, etc., vs. Medart, etc., 158 U. S., 68).

And where no appropriate mechanism exists in the prior state of the art it would become necessary to invent one, in order to have a patentable process. This was recognized in O'Reilly vs. Morse, where this court said concerning Neilson's hot blast process that (italics mine)—

> "*because* he (Neilson) had invented a mechanical apparatus by which a current of hot air, instead of cold, could be thrown in * * * *this new method was protected* by the patent."

> "In citing this case in his opinion in O'Reilly vs. Morse (15 How., 62, 115), Mr. Chief Justice Taney treated it as an invention of a mechanical apparatus by which a current of hot air, instead of cold, could be thrown in" (Risdon, etc., vs. Medart, etc., 158 U. S., 68; as above);

but the Chief Justice also stated that—

> "this new method was protected by the patent."

This was the view held in Tilghman vs. Proctor in respect to Neilson's achievement.

> "But, having invented and practically exemplified a process for utilizing this principle—namely, that of

heating the blast in a receptacle between the blowing apparatus, and the furnace—he was entitled to a patent for that process, although he did not distinctly point out all the forms of apparatus by which the process might be applied, having nevertheless pointed out a particular apparatus for that purpose, and having thus shown that the process could be practically and usefully applied." (102 U. S., 707).

The same view was later affirmed in Dolbear vs. American Bell Telephone Co. in respect to Bell's invention of the telephone.

"Bell discovered that it could be done by gradually changing the intensity of a continuous electric current, so as to make it correspond exactly to the changes in the density of the air caused by the sound of the voice. This was his art. He then devised a way in which these changes of intensity could be made and speech actually transmitted. Thus his art was put in a condition for practical use. In doing this both discovery and invention, in the popular sense of those terms, were involved—discovery in finding the art and invention in devising the means of making it useful. For such discoveries and such inventions the law has given the discoverer and inventor the right to a patent—as discoverer for the useful art, process, or method of doing a thing he has found, and as inventor for the means he has devised to make his discovery one of actual value.

* * * * *

"The patent for the art does not necessarily involve a patent for the particular means employed for using it. Indeed, the mention of any means in the specification or descriptive portion of the patent is only necessary to show that the art can be used, for it is only useful arts—arts which may be used to advantage—that can be made the subject of a patent." (126 U. S., 1.)

In the lead pipe case, this court had held that:

"In regard to the practical application of the new conception, it is as necessary as the conception itself and they must unite in the patent." (Le Roy vs. Tatham, 22 How., 132.)

Cases may arise where the aid of mechanism would be advantageous only and not indispensable.

"One may discover a new and useful improvement in the process of tanning, dyeing, etc., irrespective of any particular form of machinery or mechanical device; and another may invent a labor-saving machine, by which the operation or process may be performed, and each may be entitled to his patent. As, for instance: A has discovered that by exposing india-rubber to a certain degree of heat in mixture or in connection with certain metallic salts he can produce a valuable product or manufacture. He is entitled to a patent for his discovery as a process or improvement in the art irrespective of any machine or mechanical device. B, on the contrary, may invent a new furnace or stove or steam apparatus, by which this process may be carried on with much saving of labor and expense of fuel, and he will be entitled to a patent for his machine as an improvement in the art." (Corning vs. Burden, 15 Howard, 267.)

"Another person might invent a better apparatus for applying the process than that pointed out by Neilson, and might obtain a patent for such improved apparatus, but he could not use the process without a license from Neilson. His improved apparatus would in this respect stand in a relation to the process analogous to that which an improvement on a patented machine bears to the machine itself." (Tilghman vs. Proctor, 102 U. S., 707.)

If, however, before application for patent the same person had invented both the vulcanizing process and a new vulcanizing furnace, or had invented both the hot blast fuel

burning process and two forms of hot blast fuel burning apparatus, one crude, the other improved, he would have been required by the statute to include the best apparatus for performing the process.

> "The patentee suggests it as what he conceived to be the best way, apparently because the result is produced with great rapidity and certainty." (Tilghman vs. Proctor, 102, U. S., 707, 719.)

According to the English decisions (see appendix to Evans vs. Eaton, 3 Wheat., 655) the specification must so describe the invention—

> "That the public may, after the expiration of the term, have the use of the invention in as cheap and beneficial a way as the patentee himself uses it,"

and this requirement is consistent with the language of section 4888, Revised Statutes, which requires "the process" and not simply a process to be explained, and "in case of a machine he shall explain the principle thereof and the best mode in which he has contemplated applying that principle," and with section 4920, Revised Statutes, which, in an action for infringement, allows the defendant to show under the general issue:

> "First. That for the purpose of deceiving the public the description and specification filed by the patentee in the Patent Office was made to contain less than the whole truth relative to his invention or discovery, or more than is necessary to produce the desired effect."

> "Those familiar with the art, I am persuaded, would understand the nature of the materials required although it is true, as disclosed by the evidence, that there was at that time a practical difficulty in obtaining a supply in the market.

"I am of opinion, however, that the specification was, for the purpose of deceiving the public, made to contain less than the whole truth relative to the invention, and hence the patent must be held to be invalid (R. S., Sec. 4920). The patentee had discovered previously to his application that the dye should be water-proof and that the yielding surface used in polishing should be an inflated air cushion. * * * The necessity of a water-proof dye is hardly even suggested, and the polishing surface is described as formed of cotton cloth or chamois skin covering a bed of felt or any other suitable material. Since the great importance of the water-proof quality in the dye was well understood by the inventor, as well as the absolute necessity to his process of a certain specific yielding surface, I must hold that the purpose to deceive the public is necessarily implied from his failure even to suggest these requirements." (Circuit Court in Electric Boot and Shoe Finishing Co. vs. Little, 75 Federal Reporter, 276, in a suit on a claim for an "improvement in the art of polishing and finishing sole and heel edges and other parts of boots and shoes.")

Nor does any decision in any court suggest that in a patent covering a process the patentee may not lawfully claim therein every part of the apparatus which he must describe in order to disclose the whole truth with respect to such process and such apparatus.

In James vs. Campbell, the court indicates with respect to each of Norton's broad claims (for the process and general combination, respectively) that

"he might have asked to have it patented at the same time and in the same patent" (104 U. S., 370)

with the specific form of implement.

In New vs. Warren, the Circuit Court said with respect to a process claimed in the reissue of a machne patent:

> "The description on which it was founded was in the original, and the process, if patentable at all, might have been claimed there; but it was not." (C. D., 1882, 371, 373.)

In Merrill vs. Yeomans, the court said of an original patent:

> "There is no question here but that the patent is good for the second claim, for the superheating coil, with its steam pipe, etc. And we are all of the opinion that it is good for the process of distillation described in the specifications, by which the heavy hydrocarbon oils are deodorized. It is, therefore, a valid patent for two important matters well set forth and described" (94 U. S., 568, 573).

In Heald vs. Rice, this court said:

> "It appears, then, from the mere reading of the two specifications that the invention described in the first is for the return-flue boiler, while that described in the second, abandoning the claim for the boiler itself, is for a particular mode of using it with straw as a fuel, by means of an attachment to the furnace door for that purpose. It might well be that Rice was entitled to patents for both separately or to one for both inventions; but it is too plain for argument that they are perfectly distinct."

In the Telephone Cases, the court sustained Bell's single claim as covering both process and apparatus.

> "But this argument ignores the fact that the claim is first for the process; and second, for the apparatus. It is to be read (1) as a claim for the method of transmitting vocal and other sounds telegraphically, as herein described, by causing electrical undulations similar in form to the vibrations of the air accompanying the said vocal or other sounds, substantially as set forth,

> and (2) for the apparatus for transmitting vocal or other sounds telegraphically, as herein described, by causing electrical undulations * * * substantially as set forth" (126 U. S., 1, 537).

See also quotations from *ex parte* Frasch and United States vs. Allen, 192 U. S., 543 and 566, on pages 19 to 21 of this present brief.

In Lawther vs. Hamilton the Supreme Court U. S. said:

> "This process consists of a series of acts done to the flaxseed. It is a mode of treatment. The first part of the process is to crush the seed between rollers" (124 U. S., 1).

The function or operation of rollers (as distinguished from edge runners and other crushers) was part of the process. It also said:

> "The vertical tube is clearly not an essential part of the instrumentality used, and constitutes no limitation of the process" (same).

It may be of interest to note that the court below held that the invention

> "was undoubtedly a useful improvement; but it was not the invention or discovery of a new process. * * * What the complainant accomplished was a change in mechanical appliances and operation, by which an existing process and each step thereof were made more effective in its results" (quoted in same).

Prior to the enactment by Commissioner Charles H. Duell, in 1899-1900, of an addition to present rule 41, which addition forbade joinder of process claims and apparatus claims in all cases, it was, with two short intermissions, the

general practice to include process claims and apparatus claims in the same patent; and many such patents have come before and been sustained by the Supreme Court U. S. Among them are:

Silsby vs. Foote, 20 Howard, 378.
Merrill vs. Yeomans, 94 U. S., 568.
American Cotton Tie Co. vs. Simmons, 106 U. S., 89, 92.
The Telephone Cases, 126 U. S., 1, 537.
Hoyt vs. Horne, 145 U. S., 302, 304.

"For this apparatus he has applied and been allowed letters patent. He now seeks, in another division of his application, to obtain a second patent, with the following claim: 'The process above described of oxydizing the products of combustion, namely, by bringing air in contact with these gases while being mixed and in a state of disturbance.'

"The first answer to this claim is that it cannot form the subject of a separate patent. It is not for a distinct and separate part of the thing patented in the original. The furthest point to which the division of inventions has been pushed has been to grant one patent for a process and another for the product of that process. Such patents have, with some hesitation been sustained (Goodyear vs. Honsinger, 3 Fisher, 150; Goodyear vs. Wait, 3 Fisher, 244; Goodyear vs. Providence Rubber Co., 2 Fisher, 510), but upon the express ground that this was a matter confided by law to the discretion of the Commissioner. But I have never known one patent to issue for a machine and another for the law or principle by which it operates. The mechanism of applicant is of no possible value except to carry out this process. Aside from this it possesses no patentable utility. The process is of no avail unless carried on thrrough the medium of instrumentality. (Morton vs. New York Eye Infirmary, 2 Fisher, 324.) It would be idle to sell the patent for the mechanism, and withhold that which covers its legitimate and only mode of

operation." (Case of Lowe, C. D., 1870, 39, Samuel S. Fisher, Commissioner.)

"It appears, therefore, that the combinations included in the second and third claims are improved mechanisms by which this process may be the better carried on. It may be carried on without these, but not so rapidly or effectively. Unquestionably, then, the idea or mental conception of the improved machine is not necessarily a part of the original conception of the fabric, or the process by which the fabric is produced; yet it may be a very closely related part of the invention, possibly essential, as a matter of fact, to the successful manufacture of the invention. These improvements upon the machine may, and it seems to me probably do, bear the same relation to the original invention as improvements in the details of a machine bear to the general principle or improvement of its operation; and it would seem to be as proper to admit this modification, or detail, or perfection of the invention, as far as applicant was able to carry it, into the patent, for the principle part of the invention, as it would be to grant a patent containing a broad claim for the principle of a machine, and also narrow claims for details of construction." (Case of Dailey, C. D., 1878, 3, 4 and 5, Ellis Spear, Commissioner.)

"In the present application the particular apparatus employed to carry out the process is not the only means which can be employed for that purpose, as demonstrated by the Examiner.

"Still the use of the apparatus in the manner described would necessarily involve the operation of the process claimed. They are dependent on each other, and mutually contribute to produce a single result" (case of Tyne, C. D., 1879, 3; W. H. Doolittle, Acting Commissioner).

Commissioner Butterworth held that where inventions fall within the same statutory class

"the rule applies which was laid down in *Hogg vs. Emerson* and in the decision of the present Commis-

sioner in *ex parte* Mefford (25 O. G., 881) that in order to be joined in one patent they must be connected in design and operation; but as between statutory subjects of invention even this rule cannot serve to warrant their joinder in one application * * * if each is separately capable of supporting a patent" (case of Blythe, C. D., 1885, 82, 86).

His immediate successor, Mr. Montgomery, felt

> "however, no hesitancy whatever in saying, generally, that the unqualified statement that 'claims for methods, apparatus, etc., are prohibited by the statute from ever being joined or included in one patent' is faulty, and, in my judgment, cannot be sustained." (Case of Young, C. D., 1885, 108, 109).

The next succeeding Commissioner, Mr. Hall, said:

> "I am aware of all that may be said in support of the idea that a process and an apparatus both conduce as means and mutually co-operate to produce a single result. But they are not one invention. They do not act and co-operate with each other so as to result in a third invention or combination." (Case of Herr, C. D., 1887, 105, 125.)

Mr. Charles E. Mitchell, who next became Commissioner, referring to the last quotation, said:

> "I cannot concur in the view that seems to be implied in the language quoted and in other passages that might be cited from the same decision, that in order to authorize a single patent for several distinct inventions which mutually contribute to a single result there must be such intimacy of interconnection and co-operation as to 'result in a third invention or combination.'
> * * * * * * * * * *
> "The design and operation of a process are to work out a given result. The design of the concomitant ap-

paratus is to work out the same result. It is true that they are patentably different inventions; but to say that they cannot be interdependent seems to me to exalt metaphysics at the expense of experience. The inventor of the telephone came to the Patent Office and in one application asked for a patent upon the newly-invented process and also upon the apparatus by which it was made operative. Suppose division had been required and two patents had issued—one for the process and another for the corresponding apparatus—and that thereafter the process patent had been assigned to one party and the apparatus patent to another party. Neither one of the grantees could in that case have transmitted a single message, because each in so doing would inevitably have infringed the other's patent, and not until the invention of the contact-transmitter, or some other novel apparatus, would the dead-lock have been released. It certainly cannot exalt the Patent Office in the estimation of the public to insist upon substituting for one operative patent two patents which in different hands would each render the other valueless." (Case of Lord, C. D., 1890, 16, 22 and 23.)

"The Examiner required division between the five claims relating to the apparatus and the sixth claim for the method. The Examiner, apparently conceding that apparatus and process do not necessarily call for division, states that they cannot be mutually dependent upon each other unless each is absolutely indispensable to the exercise of the other. I cannot concur in the view thus presented. If the words 'absolutely indispensable' were substituted for the words mutually dependent in Rule 41, the conclusion could not be avoided that the rule had been made more stringent in the direction of requiring division. Mutual dependence may, in fact, exist between two co-operating or contributing devices or forces even when another force or instrumentality might be substituted for one of them.

"Again, it is said that the machine is equally adapted to other purposes for which centrifugal machines are used; but the fact that the machine is adapted to other

purposes, if such be the case, does not prevent it from contributing to secure the purpose and result specified in the application. It is sufficient to justify joinder if, as a matter of fact, the single result had in view by the inventor as the proximate purpose of his invention is contributed to by both process and apparatus. In such case there is mutual contribution and interdependence within the meaning of the rule." (Case of Norwood, C. D., 1890, 29, 30, Charles E. Mitchell, Commissioner).

"The Examiner in requiring division seems to have been governed by the consideration that under the McMahan case there must be such interdependence between the inventions that the process could not possibly be carried out by any apparatus other than that described, or that the apparatus could not possibly be used for any other purpose. The McMahan case does not lay down any such narrow rule. Within that decision, in order to permit a process and an apparatus to stand together in the same application, it is necessary only that the process be capable of being carried out by an apparatus in principle like that shown in such application. Interdependence means no more than that, in the language of Rule 41, process and apparatus are dependent upon each other and mutually contribute to produce a single result, or that, in the language of the Supreme Court of the United States in Hogg vs. Emerson, (6 How., 437), they are in their nature or operation connected together. If they sustain this relation it is immaterial whether or not the process may possibly be carried out by some other means." (Case of Hyde, C. D., 1890, 41, 42, Robert J. Fisher, Jr., Acting Commissioner.)

"This is an appeal from the decision of the Primary Examiner requiring division of an application as between claims for apparatus and claims for process, which process may be practiced by the apparatus, but is also capable of being practiced otherwise. Both inventions pertain to the same subject-matter. No wider

range of search is required for the two than for the one. Following ex parte Lord, (C. D., 1890, 16; 50 O. G., 987), the requirement of division is overruled." (Case of Curtis, C. D., 1891, William E. Simonds, Commissioner.)

"Upon examination of the application it appears that the mechanism covered by the second set of claims is designed for and employed in carrying out the method set forth in the first set of claims. It follows that the inventions covered by the sets of claims are interdependent.

"So far as I am aware, the courts have never held a patent invalid on the ground that it contained claims for a method or process and for mechanism or apparatus for carrying said method or process into effect. It is now the well established practice of the office that claims for a process and claims covering means for carrying out such process may be joined in one application, especially when the same examination will practically cover both inventions. This general rule will not be disturbed. An important exception to this rule should, however, be recognized. It is that the Office classification must be considered in determining the question whether process and apparatus may be joined in the same application. This question of classification is one of the highest importance, and unless the lines of classification are kept clear there is danger that the present patent system will fall to pieces of its own weight. If, therefore, the process should be classified in one division and the apparatus in another, a sufficient reason would exist for requiring division. The present petition covers exactly this point, and it is, therefore, denied." (Case of Everson, C. D., 1893, 73 and 74, Samuel Fisher, Assistant Commissioner.)

"This petition is brought to review the action of the Examiner in requiring division between claims for the process and the apparatus. The case might be disposed of by indorsement were it not for the fact that it affords

an opportunity to present my reasons for a contemplated change in Office Rule 41.

* * * * * * * * *

"The argument advanced by those who favored the requirement that claims for process and apparatus should be made the subject of separate applications has rested mainly on the following grounds: (1) That process and apparatus being concededly separate and independent inventions and the statute providing only for the grant of one invention in one patent, therefore patents embracing claims for process and apparatus are invalid; (2) that the interests of a perfect classification system require separate applications; (3) that the Government is deprived of its lawful fees and an injustice done to the public and to inventors who only claim a single invention." (Case of Boucher, C. D., 1899, 133, 135 and 139; Charles H. Duell, Commissioner.)

"However closely allied or dependent upon each other a process and an apparatus by which such process is executed may be, the * * * question whether claims for a process and claims for an apparatus should be permitted in the same application is one of office policy, and I think it wise to exercise the discretion vested in the Commissioner and require that claims for a machine or apparatus and its process be presented in separate applications." (Case of Hans A. Frasch, C. D., 1900, 50, 52-53, Charles H. Duell, Commissioner.)

Prior to Commissioner Allen, who decided Frasch's case in issue in these proceedings, Commissioners Butterworth, Hall, and Charles H. Duell alone, so far as the writer of this brief is aware, have forbidden the joinder of process claims and apparatus claims in the same application; and all the other Commissioners (that is to say, all those who have allowed joinder of process claims and apparatus claims in any case) have in effect (and many of them in express words) repudiated the idea that incapacity of separate use was a test of joinder in cases of process and apparatus inven-

tions. As before observed, no Commissioner whatever has applied the test of inseparability to cases of "genus and species" or of combinations, sub-combinations and elements.

The test itself has been applied by some (not all) Commissioners to cases of process and product or of machine and product; but it has not in general been applied to such cases. In the courts no application has been made of such test; and no objection has ever been made by any court to joinder of process and product, or even of machine and product. It is even yet an open question how far they can be patented separately.

> "Where a new process produces a new substance the invention of the process is the same as the invention of the substance, and a patent for one may be reissued so as to include both, as was done in the case of Goodyear's vulcanized rubber patent." (James vs. Campbell, 104 U. S., 356, 377).

In Plummer vs. Sargent, this Court said that

> "although there are two patents—one for the process and the other for a product—there is in fact but one invention." (120 U. S., 442).

> "It is apparent that the claim for the process in No. 283,136 is merely for the process or method of cutting away and removing the metal, so as to permit of the bending, and of doing the bending, and of producing the close joint as the bending takes place, such process or method being merely the process or method involved in making the article covered by claims 1 and 2 of No. 281,640. In other words, claims 1 and 2 of No. 281,-640 are each for an article produced by a described method or process, and the claim of No. 283,136 is for such method or process of producing such article. The method is a purely mechanical method. No. 281,640 was applied for more than eleven months before No.

> 283,136 was applied for, and was issued twenty-eight days before No. 283,136 was issued. There was no patentable invention in No. 283,136 when it was applied for, in view of what was applied for by claims 1 and 2 of No. 281,640. After a patent is granted for an article described as made by causing it to pass through a certain method of operation to produce it—as, in this case, cutting away the metal in a certain manner and then bending what is left in a certain manner—the inventor can not afterward, on an independent application, secure a patent for the method or process of cutting away the metal and then bending it so as to produce the identical article covered by the previous patent, which article was described in that patent as produced by the method or process sought to be covered by taking out the second patent." (Mosler, etc., vs. Mosler, etc., 127 U. S., 354).

Reasoning on these cases, the U. S. Circuit Court for the Northern District of New York held that

> "after the dish and the machine patents there was no room for the process patent" (Oval Dish Co. vs. Sandy Creek, etc., Co., 60 Federal Reporter, 285, 290).

According to Commissioner Samuel S. Fisher in Lowe's case, the courts had sustained

> "one patent for a process and another for the product of that process * * * with some hesitation" (C. D., 1870, 39, citing Goodyear vs. Honsinger, 3 Fisher, 150; Goodyear vs. Wait, 3 Fisher, 244; Goodyear vs. Providence Rubber Co., 2 Fisher, 510).

In Rubber Co. vs. Goodyear, the court, after referring to a machine and the product or manufacture proceeding from it, and also to processes and their result, said:

> "the patentability or the issuing of a patent as to one

in nowise affects the rights of the inventor or discoverer in respect to the other." (9 Wallace, 788, 796).

But the court there was dealing with divisional reissues, and not with original patents. Its remarks are obiter; for only one, and that the lower numbered of the two divisions was sustained.

In Plummer vs. Sargent the suit involved two divisions of a reissued patent: in the oval dish case, there were two original patents.

In Jones vs. Sewell, the U. S. Circuit Court (Justice Clifford) passed upon patents issued originally for process and product severally and held that

"Necessarily the details of the process are somewhat fully given in the specification describing the patented product; but the claim of the first patent does not extend to the process, which shows that the Patent Office committed no error in granting the second patent, as it does not include anything patented in the first patent. (Goodyear vs. Proyidence Rubber Co., 2 Cliff., 371; Ib., 9 Wall., 788; Seymour vs. Osborne, 11 Wall., 559).

"Both parties agree that it is competent for the Commissioner to grant a patent for the product and one for the process, and it is obvious that the patent under consideration is for the process, which is not included in the prior patent." (6 Fisher, 343.)

But on appeal the Supreme Court U. S., said, italics mine,

"The patent first mentioned is for an article of manufacture—a result. The second one is for a process by which a result is obtained. The first is the more full, and *embraces all that is contained in the second.*" (Sewell vs. Jones, 91 U. S., 171).

The entire invention was held anticipated; and the validity

of the later granted in view of the earlier granted patent was not discussed.

In his dissenting opinion Justice Clifford said:

> "Argument to show that the Commissioner may grant a patent for a product or new manufacture and one for the process is quite unnecessary, as that question is now firmly settled in favor of the power by the unanimous decision of this court. (Goodyear vs. Rubber Company, 9 Wall., 788; same case, 2 Cliff., 371; Seymour vs. Osborne, 11 Wall., 559; Goodyear vs. Railroad, 2 Wall., C. C., 356. Curt. on P., 4th ed., sec. 269, p. 327)."

The U. S. Circuit Court in Pennsylvania Salt Co. vs. Guggenheim treated the three divisions of a reissued patent (one for process and another for product, the third being for a modified product)

> "as one patent with three distinct claims" (3 Fisher, 423);

but the Supreme Court U. S. in Miller vs. Eagle stated with respect to separate original patents that

> "In *Underwood vs. Gerber* (149 U. S., 224) it was ruled that when a patentee obtained two patents on the same day, upon applications filed on the same day, they could not be treated as one patent with two claims," * * * (151 U. S., 186.)

In McKay vs. Dibert the U. S. Circuit Court, referring to separate original patents for machine, for process and for product, respectively, said that

> "all embarrassment would have been avoided if the officers of the Patent Office had required the inventor, when he applied for the process and product patent, to

> surrender his original patent for the mechanism, and had then made three several reissues for the machine, the process, and the product, all bearing the same date and expiring at the same time" (5 Federal Reporter, 587);

but both the process and product patents were held invalid in McKay vs. Jackman; for one reason, because of James vs. Campbell (104 U. S., 356), which was after McKay vs. Dibert.

> "As before shown, Blake's machine patent exhibited both the shoe of his product patent and mode of construction of his process patent, to which he was no more lawfully entitled than Norton was to his second patent for what was exhibited in the first." (12 Federal Reporter, 615, 621.)

It may be questioned also whether the suggested reissues would have been valid as such in view of James vs. Campbell.

Whether, however, a division would or would not be tolerated in the case of reissue, which would not be tolerated in the case of original patents, a division of process and product claims seems unnecessary in either. Thus in Pennsylvania Salt Co. vs. Guggenheim, the U. S. Circuit Court said, italics mine, that in the

> "amended patent of 16th of April, 1867 (the reissue), * * * the improvement had been *unnecessarily* split into distinct patents" (3 Fisher, 423, as above).

In Kelleher vs. Darling, the U. S. Circuit Court for the District of Maine said, italics mine, that

> "the process of making an article of manufacture is a different invention from that of the product. *Both may*

> *be included in the same patent,* but the required description is as essential and indispensable in the one case as in the other." (C. D., 1878, 381, 386).

In Plummer vs. Sargent, the Supreme Court U. S. says that

> "whatever likeness may appear between the product of the process described in the patent and the article made by the defendants, their identity is not established unless it is shown that they are made by the same process." (120 U. S., 442.)

The dental vulcanite patent seems to have been for an article of that sort (Smith vs. Goodyear, D. V. Co., 93 U. S., 486; Goodyear D. V. Co. vs. Davis, C. D., 1881, 131).

But the joinder of process and product claims in the same patent is not confined to such cases. In Merrill vs. Yeomans, decided at the same term as Smith vs. Goodyear D. V. Co., the court said that

> "it is made to appear in the case that the oils sold by the defendants were produced by a process very different from that described by the appellant.
>
> "We can see no reason why the applicant for the patent, if he had in his mind a claim for the article produced, should have intended so to limit his claim. If the *article* was the discovery which he sought the exclusive right to make, use, and sell, he was entitled to the monopoly, however produced." (94 U. S., 568).

The court in the same opinion had previously said:

> "It is fairly to be inferred from this statement that if all which is described as new in these specifications is really so, the inventor has a right to a patent for three inventions:

"1. For a modification or improvement in the distilling apparatus.

"2. For a new process or mode of distilling heavy hydrocarbon oils, by which they are deprived of their offensive odors.

"3. For the product of this new process of distillation, namely, the deodorized heavy hydrocarbon oils fitted for use in the arts." (94 U. S., 568).

And the court adds:

"If the patentee is also entitled to a patent for the product of this distillation, and has failed, as we think he has, to obtain it, the law affords him a remedy by a surrender and reissue. When this is done, the world will have fair notice of what he claims—of what his patent covers—and must govern themselves accordingly."

In Cochrane vs. Badische, etc., this court held that a product reissue of an original process patent would be for

"a different invention from that described in the original patent * * * unless the product claimed in the reissue is precisely that product and no other, which the process describes in the original patent produces" (111 U. S., 293);

but it did not hold that the product's identity would necessarily depend upon the identity of the process used in its manufacture. This would result only from failure to identify it otherwise.

"Every patent for a product or composition of matter must identify it so that it can be recognized aside from the description of the process for making it, or else nothing can be held to infringe the patent which is not made by that process." (111 U. S., 293.)

Merrill's original patent described

> "though in short terms, the article produced, the main feature of which he declares to be its freedom from the offensive odor which, before his invention, seemed to be an inseparable quality of those oils; and he mentions some of the more important uses to which this deodorized oil is applicable in the arts." (94 U. S., 568.)

It is evident, however, that the principles which govern the identity of inventions in original and reissued patents do not limit the joinder of related and dependent inventions in one patent. If the relationship of dependency amount to identity in the sense of the statute relating to reissues, the right to join the claims in an original patent is beyond cavil; but this right exists in other cases also. See quotations on pages 49 and 50 of this brief from James vs. Campbell, 104 U. S., 356, 370; New vs. Warren, C. D., 1882, 371, 373, and Heald vs. Rice, 104 U. S., 737.

In the nickel plating patent, claim 4 to the article, irrespective of the mode of making it, was joined with claim 1 to the process. In United Nickel Co. vs. Pendleton both claims were held valid and infringed.

> "As to claim 4 it is distinctly a claim to a product or article of manufacture, and patentable as a manufacture. It was a new product, never known before Adams's invention. As already said, that claim was never construed in any case before referred to where a decision was made sustaining claim 1. Notwithstanding anything said in the Harris case, the conclusion I have now reached is that claim 4 is a valid claim, irrespective of any employment of the invention covered by claim 1, and that that claim has been infringed. It is contended that claim 4 claims a result, an idea, an abstract principle, and that its invalidity is shown by the decision in the case of O'Reilly vs. Morse (15 How.,

62). But a patent for a process or a product is a different thing from a patent for a principle, as explained by Mr. Justice Bradley in Tilgham vs. Proctor, ubi supra, in commenting on O'Reilly vs. Morse. A manufacture or product, if new, may be claimed irrespective of the mode of making it." (15 Federal Reporter, 739).

In Miller vs. Eagle, the Supreme Court U. S. said that:

> "A single invention may include both the machine and the manufacture it creates, and in such cases, if the inventions are really separable, the inventor may be entitled to a monopoly of each" (151 U. S., 186, 199).

From the context the suggestion is that there might be two original patents if the machine and manufacture were "really separable" and could not be two original patents if not really separable; but a right to join in one patent, whether separable or inseparable, is to be inferred from the statement that

> "A single invention may include," etc.

In Merrill vs. Yeomans the right to join claims to process, machine (apparatus) and product in the same patent was affirmed; and with this agrees the decisions in United States vs. Allen, 192 U. S., 543, and in *ex parte* Frasch same, 566.

In the Patent Office the Commissioners who have refused to allow process and apparatus to be claimed both of them in one patent, and some Commissioners who have allowed joinder of process and apparatus, have allowed process claims and product claims to be joined only when the

> "relation is that the process can make no other product and the product can be made by no other process."

(Case of Tainter, C. D., 1889, 133, 148; Benton J. Hall, Commissioner.)

Other Commissioners have repudiated such test:

> "Where a process and its product are claimed in one application, the office will not concern itself with the inquiry whether the article might be made by any other process, or whether the process will necessarily result in the particular product, for the purpose of determining whether division should be ordered between process and product. The criterion would be no guide in the case where the process were new, as to which the office could not say with certainty whether it must always result in the product.
>
> "Similarly, in the case of a new article such a rule would require the office to solve the insoluble question whether the article might not be made by some other method not yet invented or discovered, or else, where a known process had produced the article, the order to divide would be followed by the rejection of the claim for the article as old." (Case of Thomson, C. D., 1894, 8, 10; John S. Seymour, Commissioner.)

It is not considered necessary here to review further the decisions or the practice in the Patent Office.

From what has been shown, it is plain not only that the courts have never, in any case, suggested, as a test of joinder of inventions, that these should be incapable of separate use, but also that the Commissioners of Patents have, none of them, applied such test to inventions generally; since those Commissioners which have applied the test at all (many of them repudiating it wholly) have applied it only in cases of machine and product and of process and product. In case of process and machine the Commissioners have either allowed joinder more generally or have forbidden it altogether. With few exceptions, they have allowed joinder more generally.

II.

Rule 41 allows both the Frasch process claims and the Frasch apparatus claims to be made in the present application.

Said rule is as follows:

> "Two or more independent inventions can not be allowed in one application; but where several distinct inventions are dependent upon each other and mutually contribute to produce a single result they may be claimed in one application." (Record, pp. 47, 58 and 89.)

The unity prescribed by this rule is in the result. The result produced must be single. It also must be the mutual contributions of mutually dependent inventions; but the rule does not in terms specify the nature of the dependency. It may be any dependency whatever; but the natural reference would be to the result. For producing the result to which they mutually contribute the inventions must be dependent on each other; but the rule does not state that they must be absolutely indispensable for this purpose or for any purpose whatsoever; nor does it state that the inventions must be incapable of separate use.

The difficulties in the prior state of the art, which Frasch by his inventions has overcome, were due to the incrustations of calcium sulphate on

> "the heating surfaces of the vessels in which brine or other liquid containing calcium sulphate is heated in order to evaporate the said brine for the recovery of salt therefrom or in order to accomplish some other purpose. This incrustation or scale is very troublesome to the salt-maker, as its presence interferes with the transmission of heat to the brine and its removal is

hard. In the evaporation of brine for salt in closed pans (such as vacuum pans for example) it has been customary (in my experience) to draw off the brine twice a day and after filling the pans with water to boil the latter in order to dissolve the common salt in the incrustation and then to scrape the flue walls in order to remove the calcium sulphate. In open pans, it has been the practice to clean the surfaces of the heating pipes once a week by means of hammers. The removal of the incrustation in either of these ways stops the evaporation while it is going on, thus diminishing by so much the output of a given plant, besides being a direct source of expense. The removal by hammering tends moreover to shorten the life of the heating pipes; for even when made extra heavy for the purpose of withstanding the hammering, the repeated blows necessary to remove the coatings are apt in time to split the pipes, so that they leak and have to be replaced." (Record, page numbered 16 in red ink.)

To overcome these difficulties

"the incrustation of calcium sulphate is removed from the heating surfaces by condensing steam in contact with so-encrusted surfaces; and as an additional improvement, the condensation is effected, and the heat liberated in such condensation is absorbed, by a body of brine on the opposite side of the heat-conducting walls. The heat liberated by the condensation, therefore, need not be wasted but can be utilized in the heating of the brine with or without vaporizing the same. It is found that the incrustation formed in a given time, can be removed by the condensing steam in an equal (if not in a less) time; the removal of the incrustation consequently need not diminish the output of a given plant; for the brine-heating operation can be carried on with practical continuity; although the brine which is undergoing the heating operation occupies the chambers on opposite sides of the heat-conducting walls alternately. The removal can, more-

over, be effected without any direct expense and without injury to the apparatus.

"To carry the invention into effect practically, the chambers on opposite sides of the heat-conducting walls are each provided with inlets for respectively the steam to be condensed and the brine to be heated (with or without evaporation) and with means for withdrawing the water of condensation and the product or products of the brine-heating operation (that is the heated brine if there be no evaporation or the water vapor and the heated brine if evaporation take place without bringing the brine to saturation so as to precipitate salt or the water vapor and the precipitated salt if evaporation of saturated brine be carried on). When, however, the heating of brine (with or without evaporation) in only one of the chambers may be desired, it suffices to provide the other chamber with an inlet and outlet for any cooling medium in addition to the steam-supply pipe and the outlet for the condensed water, which latter outlet may, however, if desired, be the same opening which serves for the withdrawal of the cooling medium." (Record, page numbered 17 in red ink.)

Frasch's six claims are as follows:

PROCESS CLAIMS.

"1. The process of removing incrustations of calcium sulphate from heating surfaces, consisting in condensing steam in contact with said surfaces by carrying off the heat from the opposite side of the heat-conducting walls, substantially as described.

"2. The process of removing incrustations of calcium sulphate from heating surfaces, consisting in conden-

APPARATUS CLAIMS.

"4. An apparatus divided into chambers by heat-conducting walls and provided as to one chamber with a steam supply pipe, a brine supply conduit, and means for withdrawing the products of the steam-condensing and brine-heating operations, and as to other chamber with a steam supply pipe, means for supplying a cooling medium, and means for withdrawing the products of

sing steam in contact with said surfaces by transferring its heat to brine of lower temperature on the opposite side of the heat-conducting walls and so carrying off the heat, the steam and brine being applied alternately to each side of said heat-conducting walls so that the heating of the brine and the removal of the incrustation from a previous heating proceed together, substantially as described.

"3. The process of removing incrustations of calcium sulphate from heating surfaces, consisting in condensing steam in contact with said surfaces by transferring its heat to saturated boiling brine of lower temperature on the opposite side of the heat-conducting walls and so carrying off the heat, the steam and brine being applied alternately to each side of said heat-conducting walls so that the evaporation of the brine with precipitation of salt and the removal of the incrustation from a previous heating proceed together, substantially as described. (Record, pages numbered 21 and 22 in red ink.)

the steam-condensing and cooling - medium heating operations, substantially as described.

"5. An apparatus divided into chambers by heat-conducting walls and having each chamber provided with a steam supply pipe, a brine supply conduit, and means for withdrawing the products of the steam-condensing and brine heating operations, substantially as described.

"6. An apparatus divided into chambers by heat-conducting walls and having each chamber provided with a steam-supply pipe, a brine-supply conduit and means for withdrawing water from the steam condensing operation and water vapor and salt from the brine-heating operation, substantially as described." (Record, page numbered 22 in red ink.)

Before the present invention the incrustation gave rise (quotation above from page 16 of record):

(a) To a diminution of the output of a given plant by stopping the brine heating during the removal of the incrustation;

(b) To direct expense in the removal, with in some cases partial destruction of the apparatus by hammering.

By means of the present invention

(a) "the brine heating operation can be carried on with practical continuity";

(b) The removal of the incrustation can "be effected without any direct expense and without injury to the apparatus."

This practically continuous heating without direct expense for removal is "a single result" (as required by rule 41) to which the process and the apparatus "mutually contribute."

The steam and the brine are the efficient agents, the steam acting the double role of eating off the incrustation left by one batch of brine while it is at the same time conductively heating the next batch of brine, and the brine acting in the double role of condensing the steam while it is at the same time becoming itself of higher temperature and incidentally (but unavoidably) depositing fresh incrustation.

But steam and brine being fluids can not operate without apparatus; and the two chambers on opposite sides of the heat conducting walls, which, with their inlets in the form of steam pipes and of brine conduits and with their appropriate outlets compose the apparatus described and claimed, furnish what is necessary to enable the steam and brine to interact in proper manner to effect the "single result" specified. It is evident that if this result is to be accomplished the brine and the steam must exchange places at intervals with respect to the heat conducting walls, whenever the incrustation on the brine side becomes thick enough to in-

terfere with the conduction of heat from the steam to the brine. The inlets and outlets of the chambers are adapted to permit this.

The process contributes the agents which do the work; but the apparatus supplies the means for controlling the agents which thus perform. Each invention contributes after its manner to the "single result."

The process and the apparatus also depend on each other. In fact, without the latter the former is inoperative; and without the process the differences between the Frasch apparatus and the brine heaters of the prior state of the art are futile and without effect. But even if each were operative to some extent without the other, they would depend on each other for their complete contribution to the single result specified.

If Mr. Frasch might have invented a different apparatus, he did not do so; or if he did so, he was under no obligation to exhibit it; and he has failed to do it. An exhibition of two forms of apparatus would, however, not have shown that the process was independent of the apparatus. If A has two quarter dollars and needs to purchase car tickets, his purchase is dependent upon the possession of a quarter; and it is not material which quarter is spent.

Following the R. N. Eagle case all the Commissioners have recognized that an applicant who should exhibit his invention in more than one mode (species) could select for special claim whichever form (species) he might prefer without dictation or suggestion from the Patent Office. See pages 23 to 29 of this brief. Upon the same principle, the inventor of a process needing apparatus for carrying it into effect, who should exhibit two apparatus, each of them appropriate to the purpose, should have at least the sole option of making special claim to whichever apparatus he should select.

Dependence of a given process upon apparatus shown for carrying it into effect is not avoided by suggestion of another apparatus which would do as well, but by showing that the process will accomplish the same results with omission of the apparatus shown and without substitution of another. Even if there were another apparatus which would answer and which was so well known in the prior state of the art that the courts would take judicial notice of its existence (as certain prior inventions were judicially noticed in Brown & Seavey vs. Piper, C. D., 1876, 464, upon the question of novelty), the process would not be independent of the apparatus shown, unless this latter could be blotted out and still leave the process not only operative, but operative with the same results as before.

In like manner dependence of a given apparatus upon a specified process is not avoided by suggesting another use of the apparatus; but by showing that the apparatus will fully accomplish its intended purpose, without involving all or any part of the process. What is the intended purpose, moreover, must be ascertained from the applicant's specification.

In attempting to support the allegation of a capacity for separate use, the Patent Office and the Court of Appeals, D. C., have been obliged to go outside the uses of the Frasch specification and to disregard the practicality of the new uses suggested by them. Thus the Examiner alleged that Frasch's apparatus could be used as a beer cooler, as a water still, or a water heater; but as

> "to what advantages follow in the above cases, the Examiner declines to state, though several suggest themselves; as he has no desire to anticipate any use in that line that others may care to employ. Moreover, it is immaterial whether there be any advantage over the art in these classes." (Record, p. 54.)

The Examiner failed to suggest any mode of using the process without employing the apparatus.

The Examiners-in-Chief alleged that

> "the use of the present machine as a gas, air, water, or other fluid heater or cooler, vaporizer or condenser or precipitator, does not perform this art and usually would not wash off any kind of deposit. It is only when it is used to heat salt-brine or any other liquid which deposits calcium sulphate that this machine works this process. * * * But we also find that a two chambered machine which is a feature of every machine claim before us, is not necessary to the performance of the art of these art claims.
>
> "That art may be performed in an open salt-evaporating pan by emptying the pan of its brine from time to time and applying wet steam to the incrustations of calcium sulphate on the upper side of its bottom, the heating surface of the pan, to dissolve and remove this incrustation. That pan need not be heated by steam. It may be heated by flame." (Record, p. 71.)

The Examiners-in-Chief overlook the fact that the flame heated pan has two chambers, namely, a brine chamber inside and a fire chamber outside.

Frasch (Record, p. 85) requested the Commissioner to

> "state in what manner and with what useful result (if any) it is held that applicant's 'process may be performed without using the particular apparatus disclosed,' "

and also

> "in what manner and with what useful result (if any) it is held that his 'apparatus may be used without performing the process.' "

The Commissioner declined

> "further explanation." (Record, p. 86, at bottom.)

At the hearing before the Court of Appeals, D. C., however, the suggestion was made in argument for the Commissioner that the encrusted plates could be transferred from one apparatus to another in performing the process and that neither of these apparatus need be within the apparatus claims.

The Court of Appeals, D. C., did

> "not consider it necessary to furnish illustrations. They will occur to any one who examines the specification." (Record, p. 91, lines 11 to 13.)

There is no allegation that the apparatus could be used as designed by Frasch without performing the process. The only use designed is for *heating brine;* and the Examiners-in-Chief held that

> "when it is used to heat salt-brine or any other liquid which deposits calcium sulphate * * this machine works this process." (Record, p. 71.)

As a brine heating apparatus, they admitted that the apparatus was capable of use only when the process should be performed therein.

The dissenting member of the Board, who held that division should not be required, said:

> "The apparatus could not, as the Examiner alleges, be used as a beer cooler or a water still unless other sources of supply were substituted for those which are disclosed and claimed, and said apparatus, if it were operated in the manner described, and as it is

intended to operate, would automatically execute the alleged process." (Record, p. 72.)

A beer pipe or supply pipe conveying non-encrusting liquid is neither the steam pipe nor the brine conduit of the claims; and the Examiner's beer cooler or water still would not infringe claims 4, 5 and 6 (or any of them). A fence wire is not an electric wire; and a wire covered with gutta percha as a mechanical protection does not anticipate a gutta percha covered telegraph conductor.

> "The point of the invention is not the mere mechanical covering of a metallic wire with gutta percha, as a mechanical protection from abrasion or injury from without, or for any purpose aside from a use of the covered wire as a conductor of electricity." (Circuit Court in Colgate vs. Western Union Telegraph Co., C. D. 1878, 440, 442.)

In Rosell vs. Allen (C. D. 1900, 333, before the Court of Appeals, D. C.) the issue specified:

> "2. A tanning bath, containing sulphites, bisulphites or hyposulphites of chromic oxid."

There was no suggestion that this included a bath for the pipes of a beer cooler or a bath for anything beside tanning or its equivalent.

A steam pipe is a pipe leading from a source of steam (a pipe conveying steam or virtually so); and a brine conduit similarly is one leading from a source of brine (a conduit conveying brine or virtually so). The steam generator and the brine source are not illustrated by applicant here; it is unnecessary that they should be:

> "That which is common or well known is as if it were written out in the patent and delineated in the

drawings." (Webster Loom Co. vs. Higgins, C. D. 1882, 285, 290.)

"Applicant in the brief of his counsel states that while he has mentioned an air-compressor in some of his claims he has no objection to changing the wording of such claims so as to specify 'a source of compressed air' instead of saying 'an air-compressor.' Should this be done, there would seem to be no necessity for further illustration." (Case of Rouse, C. D., 1899, 181, 182 and 183, A. P. Greeley, Acting Commissioner.)

In the present case, the Commissioner and the Court of Appeals, D. C., have declared that Frasch

"devised convenient means for performing his process, and such means constitutes the basis of his apparatus claims." (Record, p. 82, at top, and pp. 90 and 91.)

There has been no suggestion by anybody that the apparatus without the process either would or could accomplish the express objects of the invention, to-wit, the avoidance in brine heating (a) of loss by stoppages and (b) of direct expense in removal of incrustation. In fact, they substantially (the Examiners-in-Chief expressly) admit that the use of the apparatus

"to heat salt brine * * works this process." (Record, p. 71.)

They also say:

"The applicant lays stress on the continuity of the operation of his art. It is the duty of a machine to effect that purpose by applying natural agents to their place of use and to do that continuously." (Record, p. 72.)

No separate use of any part of either process or apparatus has been suggested which would be attended by any results of industrial consequence. The beer cooler suggestions are without such consequence; and they relate to the heat exchanger divorced from steam and brine supplying means. But claims for the heat exchanger could properly be joined with claims to the whole apparatus under the doctrine of combination and its sub-combinations and elements (pages 29 to 37 of this brief).

With respect to the use of a steam jet in an open flame heated pan, there is no evidence tending to show that it would be operative. On account of the higher temperature of the flames, the incrustation in such a pan would be much harder than that which forms in a steam heated pan. Moreover, the steam not being confined would most of it pass off as vapor, instead of condensing in contact with the incrustation. If it performed at all, it would not play the double role of heating a new batch of brine, while it eats off the incrustation left by a former batch of brine; and there would be no avoidance of stoppage of the heating operation.

The suggestion to transfer the heating plates from one heater to another for removal of incrustation whenever this should become so thick as to interfere with the conduction of heat by the heating places, is impractical. It also would involve stoppage of working and expense for labor, which it is the express object of the invention to avoid (quotations on pages 69 to 71 of this brief).

The decisions below, moreover, do not give sufficient consideration to the fact that patents are granted for things and not words. As this court pointed out in Bischoff vs. Wethered (9 Wallace, 812), their subject-matters exist *in pais*, outside the specifications. Even when the terms of a claim are broad, they must be viewed with reference to the

concrete subject-matter disclosed in the specification as foundation therefor (Miller vs. Eagle, 151 U. S., 186; Westinghouse vs. Boyden, 170 U. S., 537). Viewed in this light, it is not easy (nor possible) to see where the Patent Office and the Court of Appeals, D. C., can find, for example, in the concrete subject-matter disclosed in Frasch's specification, the steam jet applied to the inside of an open flame heated pan, on the one hand, and the beer coolers, on the other, on whose capacity for separate use they base their finding that Frasch's process and apparatus possess such capacity.

Frasch's process and apparatus being related and dependent inventions, all the new and original parts, improvements and combinations in each are likewise related and dependent inventions; for they all contribute to the single result of a practically continuous heating in a single apparatus of brine which contains calcium sulphate, and are dependent on each other for accomplishment of their intended purposes.

All Frasch's claims can be joined under Rule 41, for they cover inventions which depend on each other and mutually contribute to a single result.

III.

Rule 41 does not give a larger right of joinder than is permitted by statute.

Even with the widest latitude of interpretation, the right allowed by the rule of joining in the same application mutually dependent inventions mutually contributing to a single result is not larger, but very much less, than the right which

> "the statute gives to join inventions in one application

> in cases where the inventions are related" (192 U. S., 543);

that is to say where they are

> "though distinct * * * 'for the same common purpose and auxiliary to the same common end'" (same),

or, in other words, are

> "connected in their design and operation" (same).

This court held that Hogg vs. Emerson (6 Howard, 437) and the cases there cited were

> "explicit of the meaning of the statute" (United States vs. Allen, 192 U. S., 543, as above)

in permitting patents to

> "be united, if two or more included in one set of letters, relate to a like subject, or are in their nature or operation connected together" (same case).

The requirement of division was by

> "Mr. Justice Story in Wyeth vs. Stone * * * confined to independent inventions, and his illustrations indicated that he meant by independent inventions not those which, though distinct, were 'for the same common purpose and auxiliary to the same common end'" (same case).

This court also held that

> "If there is a divergence of views between the courts and the Patent Office and the divergence proceeds

from a different interpretation of the statutes, the views of the courts ought to prevail." (Same case.)

Commissioner Marble said:

"The only rule which can properly govern any person charged with the execution of the law is the law itself; and, as said by Mr. Justice Story in the case of Wyeth et al. vs. Stone et al., above cited, 'when this is strictly construed it is wisely construed.' I am unable to appreciate the suggestions made upon the argument about public policy or the policy of the law in connection with the issuing of patents. The law has no policy other than that expressed in itself, and that policy is to give to every person, upon his complying with its terms, all the rights and privileges contemplated therein." (Case of Bancroft and Thorne, C. D., 1881, 55, 57.)

"It is to be presumed when applicants file their applications for patents that they desire, if the subject-matter is patentable, to obtain valid patents. A patent to be valid can only cover a single invention. If several distinct inventions were embraced in the same patent it would be invalid for that reason. When the Office, therefore directs an applicant to divide his application because more than one invention is therein embraced, it is not simply for the purpose of requiring applicant to conform to the classification of the Office, nor because it will require more time to examine the matters embraced in the application, but because the patent can only cover a single invention and be valid. The division required is for the protection of applicant's inventions, and not for the convenience of the Office, nor to increase its revenues." (Case of Van Matteson, C. D., 1883, 52, 53 and 54.)

Commissioner Hall declared that

"The decisions of the courts, beginning with Wyeth vs. Stone and Hogg vs. Emerson, have never been fol-

lowed to their full extent in the Patent Office, except in isolated cases and for very limited periods." (Case of Herr, C. D., 1887, 105, 125.)

Commissioner Simonds said:

"That two or more inventions capable of joint use, although not always actually used conjointly, may be joined in the same patent is beyond question. * * *

"Notwithstanding that different inventions capable of conjoint use, but not always actually conjoined in use, may be covered in the same patent, it does not follow that the Patent Office must or will permit them always to be thus joined. In view, however, of the legality of such joinder the action of the Patent Office in not permitting it should be based upon some good reason. That good reason exists in the classification of inventions." (Case of Fefel, C. D., 1891, 176 and 177.)

Commissioner Seymour held that

"Within the limits of validity in the grant inventors may, as a general rule, put claims for distinct but dependent inventions in the same application or in separate ones at their option, and division should not ordinarily be required by the Office except where it is considered that a patent including all the claims would be invalid, or would be held to be valid only on the ground that an instrument should be upheld rather than it should wholly fail of its purpose. This rule leaves to the discretion of the Office the requirement of division in those exceptional cases in which the inconvenience resulting from a single application amounts to the necessity to divide, and leaves room, also, for the exercise of that discretion which the case of Bennet vs. Fowler (8 Wall., 445, 448) holds must necessarily be left on this subject to the head of the Patent Office under any general rule which may be laid down upon

> this nice and perplexing question." (Case of Demeny, C. D., 1893, 125, 126 and 127.)

The validity of a patent containing all of Frasch's claims has not been questioned; and it would be unquestionable, even if the defense of misjoinder were expressly allowed by statute. Section 4920 R. S. does not mention such a defense, however.

IV.

Rule 41 is invalid because it forbids joinders which the statute allows and, indeed, directs.

If, as this Court held,

> "the statute gives the right to join inventions in one application in cases where the inventions are related and it cannot be denied by a hard and fixed rule which prevents such joinder in all cases" (United States vs. Allen, 192 U. S., 543);

neither can the right be denied piecemeal by restricting the joinder of related inventions to certain specified cases.

In fact, the rule held invalid forbade the joinder, not of all related and dependent inventions, but only of specified classes of cases among which were those of process and apparatus inventions. Merely to specify more limited classes would not cure the defect of authority; since there would still be the denial of a right which the statute gives. All that could be said in favor of the more limited restrictions would be that the nearer the approach to a denial in all cases, the more flagrant the act of usurped dominion.

In ex parte Frasch, this court said:

> "We have just held in *United States vs. Allen*, that

> rule 41 of the Patent Office, in so far as it requires a division between claims for a process and claims for an apparatus, if they are related and dependent inventions, is invalid." (192 U. S., 566.)

As the Examiners-in-Chief recognized,

> "it would appear from this statement that the court in Steinmetz vs. Allen, Commissioner, had held that a requirement for a division of claims is always error when required of any art and apparatus, if they be related and dependent inventions." (Record, p. 58.)

Appellant contends that this court did so hold; and he calls in question the validity of any rule which would require a division of such related and dependent inventions.

It is for

> "Congress to prescribe the conditions upon which it will secure to inventors the exclusive right to their inventions." (Bate Refrigerating Co. vs. Sulzberger, 157 U. S., 1, 43),

and when an Act of Congress authorizes a given patent upon given fees and proceedings, it is evidence that no other condition is included in the contract.

It is not for the Commissioner to add to, to subtract from, or in any way to modify the conditions which Congress has prescribed. Nor can the statutory grant of a right to join process claims and apparatus claims when they are related and dependent inventions be defeated by a rule showing when process and apparatus are and when they are not to be regarded as related and dependent inventions.

> "But they are to be deemed such, not because the Secretary of the Navy has announced that they will

so regard them, but because they are, in fact, services performed at sea, and not on shore." (U. S. vs. Symonds, 120 U. S., 46, 49.)

As construed by the Patent Office and the Court of Appeals, D. C., rule 41 allows the joinder of process claims and apparatus claims only when each of them is incapable of use to any extent for any purpose without the other. See pages 19 and 75 to 81 of this brief. The rule, as thus construed, differs little from that held invalid in United States vs. Allen, 192 U. S., 543.

Bell's telephonic apparatus, while designed to transmit sound waves in accordance with his process, was later used in an annunciator system, the vibrations of the telephone diaphragm gradually releasing the drop. See also upper part of page 84 of record herein.

In an official letter in another case, which letter is not here in evidence and is merely quoted from as a part of this argument, the Examiner writes:

> "Since in almost no instance can a process be said to be so dependent upon a machine as to be inseparable from it in its design and operation, with the single exception possibly of the function of the machine, in which case the function is not patentable over the machine, the applicant will be required to elect his preferred class of invention and cancel the claims of the remaining class." (Not in transcript.)

That a patentable process is necessarily separable from its apparatus was the view expressed by Commissioner Hall in the case of Simonds.

> "Now, here are two things admitted by the applicant to be different and neither a part of the other—the one being a series of acts performed on metal, the other a mechanism by which those acts are effected in suc-

> cession. They are separately classified in the statute. He claims the things separately, as they must be claimed. He then asserts for them such close relationship that neither can be exercised without exercising the other—that is to say, each of his processes is the function of its machine only. The inseparability of his processes and machines is proof of the non-patentability of the processes. So that it appears that the intimacy of relation between his inventions of different classes is that intimacy which renders one of them unpatentable, according to the settled doctrine of the Blythe and Herr decisions and of the court decisions cited in them. The doctrine of those decisions does not permit a process and apparatus to be claimed in one application in any case whatever." (C. D., 1888, 78, 88.)

Can it be fairly asserted that a rule forbidding joinder of process claims and apparatus claims in all cases is invalid (192 U. S., 543 and 566) while a rule allowing such joinder only under a condition of inseparability inconsistent with patentability is valid?

Under the so modified rule, an applicant would be in little better condition than before; because, if a requirement for division should be reversed on appeal, the next action would be a rejection for lack of patentability; and if this should be reversed on appeal, the requirement for division would be restored; and so on.

This court in United States vs. Allen (192 U. S., 543) seems to recognize that an applicant may properly make claims commensurate with the original disclosure required of him by the statute; for it notices

> "what embarrassment and peril of rights may be caused by a hard and fixed rule regarding the separation of related inventions"

in connection with James vs. Campbell and the proposition that

> "by disclosing the apparatus in his application for the process, he might lose the right to such a patent for the apparatus";

although the court was not

> "prepared to admit such consequences, nor that James vs. Campbell so decides."

The act of Congress requires every inventor who obtains a patent to state the "whole truth relative to his invention or discovery" (Sec. 4920 R. S.); and no restriction is placed by the act (Sec. 4888 R. S.) upon the number of parts, improvements or combinations which the inventor may particularly point out as his own. He is allowed, and in effect directed, to point out *each and every part, improvement and combination* which he claims. That he is expected to point out more than one matter follows from the word "specifications" in the plural in section 4903, from the word "claims" in the plural in section 4909, from the expression "patent for his invention, as specified in his claim, or for any part thereof" in section 4915, from the expression "distinct and separate parts of the thing patented" in section 4916 and from expressions of like import in sections 4917, 4918, 4920 (fourth defense), 4922 and 4923.

Not only is there no restriction in the statute on the number and kind of claiming clauses ("specifications" of claim); but the statute expressly contemplates more than one.

The courts have founded upon a disclosure of matter without claim a presumption, in the alternative, either of lack of right or of abandonment.

> "But what can be a more explicit declaration of what

is new and what is old than the summary of the patentee's claim at the close of the specification. It implies that all the rest is old, or if not old, that the applicant does not claim it so far as that patent is concerned; the rest he impliedly, if he does not expressly, disclaims as old." (Brown vs. Guild, 23 Wall., 181, 217.)

"Of course what is not claimed is public property. The presumption is, and such is generally the fact, that what is not claimed was not invented by the patentee, but was known and used before he made his invention; but whether so or not, his own act has made it public property, if it was not so before. The patent itself as soon as it issued is the evidence of this." (Mahn vs. Harwood, 112 U. S., 354.)

This presumption was extended in James vs. Campbell to a process disclosed in an apparatus patent.

"Now a mere inspection of the patents referred to above will show that after December, 1862, Norton could not lawfully claim to have a patent for the general process of stamping letters with a postmark and cancelling stamp at the same time, nor for the general combination of a post-stamper and blotter in one instrument, nor for the combination of a post-stamper and blotter, connected by a cross-bar, for all these things, in one or other specific form, were exhibited in these prior patents. Any such claim, therefore, in the reissued patent of 1870 must be inoperative and void, as well because the thing claimed was anticipated in former patents as because it would be for a different invention from that contained and described in the original patent." (104 U. S., 356, 382.)

This court, in United States vs. Allen, in its consideration of James vs. Campbell, did not suggest that loss by disclosure of an unclaimed process in an apparatus patent (or conversely) could be avoided if the inventor

> "did not then reserve the process * * * nor the combination * * * and did not make any simultaneous application therefor." (James vs. Campbell, 104 U. S., 356.)

The general process and the general combination, in the later granted patent involved in James vs. Campbell, were, respectively, performed by and embodied in a different mechanical device from that disclosed in the earlier granted of those patents and not by and in

> "identically the same mechanical device." (Miller vs. Eagle, 151 U. S., 186);

and this perhaps explains the suggestion in James vs. Campbell that

> "having obtained a patent for his specific device and combination, if he afterwards wished to claim the general combination, and had not already abandoned it by taking a narrower patent, he was bound to make a new application for that purpose." (104 U. S., 356);

because such new application would be subject to

> "the rights which the public, by lapse of time or other cause, have acquired in the meantime." (Same.)

In passing it may be observed that by the amendment of March 3, 1897, to section 4886 R. S. no reservation of an unclaimed invention can now extend to an application made more than two years from the grant of a patent disclosing such invention; because

> "description in a printed publication in this or any foreign country * * * more than two years prior to his application"

is an absolute bar to the obtainment of a valid patent for matters so described.

But whether the process (or the apparatus) could be reserved or not, or be validly claimed in a concurrently pending application or not, the courts would hardly have founded a presumption of anticipation or of abandonment of subject-matter disclosed in a patent upon failure to claim the same therein, unless the statute intended that *each and every part,* improvement or combination disclosed in the antecedent descriptive portion of the specification should be claimed in the patent.

To forbid a claim commensurate with the disclosure exacted by the statute would be manifestly unfair to inventors.

> "The laws ought, we think, to be construed in the spirit in which they have been made, and to execute the contract fairly on the part of the United States, where the full benefit has been actually received, if this can be done without transcending the intention of the statutes, or countenancing acts which are fraudulent or may prove mischievous. The public yields nothing which it has not agreed to yield—it receives all which it has contracted to receive. The full benefit of the discovery, after its enjoyment for fourteen years, is preserved; and for his exclusive enjoyment of it during that time the public faith is pledged." (Grant vs. Raymond, 6 Peters, 218.)

If, then, fairness is to prevail, and if, as seemed to the court in Merrill vs. Yeomans (94 U. S., 568)

> "nothing can be more just and fair, both to the patentee and to the public, than that the former should understand and correctly describe just what he has invented and for what he claims a patent,"

it follows that he has and should have the fullest liberty in

claiming in a patent what may be new and patentable in the *disclosure,* which he is required to make for the public benefit in that patent.

In the present case, as applicant (appellant) had to invent both a process and an apparatus in order to have any patentable subject-matter whatsoever (sec. 4886, R. S., and cases above cited), and as he had to disclose both in order to have any legal specification whatsoever (sec. 4888, R. S., and cases above cited), so he had to claim both if he would protect both (sec. 4888, R. S., and cases above cited). If he failed to claim either he would occupy the false position of seeming to admit as old what in fact was new (Mahn vs. Harwood, above), and of dedicating it to the public (same case) what he intended to secure and what the faith of the United States was pledged to give (Grant vs. Raymond, above).

> "Inventors may, if they can, keep their invention secret, and if they do for any length of time they do not forfeit their right to apply for a patent, unless another in the meantime has made the invention and secured by patent the exclusive right to make, use and vend the patented improvement." (Bates vs. Coe, 98 U. S., 31).
>
> "One who invents or discovers and keeps secret a process of manufacture, whether patentable or not, has a property therein which this court will protect against one who, in violation of contract and breach of confidence, undertakes to apply it to his own use or disclose it to a third person" (Solomon vs. Hertz, 40 N. J. Eq., 325, citing Peabody vs. Norfolk, 98 Mass., 542, and Kerr, Inj., 181).
>
> "These secrets of his business, if they cover nothing unlawful, are his property and as well entitled to protection as the rights secured by the plainitff's patent" (Dobson vs. Graham, 49 Fed. Rep., 17).
>
> See also Hammer vs. Barnes, 26 How., N. Y. Pr., 174.

By disclosing both process and apparatus, while making claim to one only of them, Frasch would not only lose the benefit of secrecy with respect to the unclaimed part of his invention, without getting the protection which a claim thereto would afford; but he would give rights to the public which would be fatal to subsequent claim at least after two years (Section 4886 R. S. as amended March 3, 1897) if not on the grant of the first patent; and there would also be the question whether the law would or would not permit two patents for his process and his apparatus, respectively, under any circumstances.

To secure the claims in different patents applicant would have to follow different remedies.

> "Nothing can be more material to the obligation than the means of enforcement. * * * The ideas of validity and remedy are inseparable, and both are parts of the obligation, which is guaranteed by the Constitution against invasion. * * * The prohibition has no reference to the degree of impairment. The largest and the least are alike forbidden" (Van Hoffman vs. City of Quincy, 4 Wallace, 535, 538).

If he obtained two patents, he would obtain two antagonistic franchises of monopoly in place of one franchise commensurate with his disclosure.

Petitioner's process is a pioneer process; and his apparatus is a pioneer apparatus. In one patent both sets of claims would be certainly sustained with the scope given to a pioneer invention. Does anybody certainly know that the courts would sustain the claim in the later patent with the same liberality, if at all?

The Patent Office—

> "is more liberal in construing the differences between claims in one application than if they were in separate

applications both as to the materiality and the patentability of those differences" (*ex parte* Griffith, C. D., 1898, 233, 235).

The opinions in McKay vs. Jackman (12 Federal Reporter, 615); McClain vs. Ortmayer (141 U. S., 419); Underwood vs. Gerber (37 Federal Reporter, 682; 149 U. S., 224), show that the same difference in liberality of treatment is shown by the courts.

"There was no patentable novelty or invention, in view of the early patents and publications put in evidence, in applying an existing coloring substance to paper" (149 U. S., 224);

"As No. 348,073 does not claim the composition of matter, although it describes it, that composition must be regarded as disclaimed, and as being public property, and there was no invention in applying it to paper, as claimed in the patent sued on." (149 U. S., 224).

It would seem from this statement that one of Underwood's patents was for a "composition of matter" and the other for an article of "manufacture" (distinguished by the classification of section 4886 R. S.); but, if so, the classification of the statute did not result in two valid patents. If both Underwood's claims had been in the same patent, the above quoted arguments could not have been made; since the *coloring substance* or *composition of matter* could not have been regarded as *disclaimed* or as *existing* outside of the patent in suit.

"The combination of the first claim of the Clough patent being new, and consequently there never having been any valve arrangement applied to regulate the flow of gas in such a combination, the premises on which the decision of the court below proceeded fail * * * * * * * * * * * * * * * It is true that

that patent describes the tubular valve as being inside of the burner-tube; but Clough was the first person who applied a valve regulation of any kind to the combination to which he applied it, and the first person who made such combination, and he is entitled, under decisions heretofore made by this court, to hold as infringements all valve regulations applied to such combination which perform the same office in substantially the same way as and were known equivalents for his form of valve regulation." (Clough vs. Gilbert and Barker, 106 U. S., 166.)

"What we have said regarding these claims applies with even greater potency to the sixth claim, which introduces a new feature of a clamping-die constructed to act with an elastic or yielding pressure, to enable the dies to operate upon box-corners of different thicknesses. While the mere introduction of springs to enable the plunger to act with an elastic pressure may not of itself have been a novelty, its introduction into a machine which was itself novel certainly did not destroy its novel character. The claim does not cover simply a die constructed in this manner; but the elastic feature introduced into one of opposing clamping-dies, having diverging working faces, constructed to co-operate in pressing an adhesive stay-strip upon an interposed box-corner, was clearly novel; and while the introduction of this feature into an old and non-patentable machine may not itself involve invention, in this case it is merely an additional element introduced into a machine which did itself involve invention." (Hobbs vs. Beach, C. D., 1901, 311, 319 and 320).

What assurance, if any, is there that a second patent for Clough's 2d claim or for Beach's 6th claim would have been given the same scope, if sustained at all?

In Carnegie vs. Cambria this court, speaking of the necessary requirements of an apparatus to carry out the Jones process there in suit, said:

"None of the prior patents or processes to which we are referred meets these requirements. Indeed, it is scarcely too much to say that none meets more than one of them. When we add to this that none of them was ever used, or was ever susceptible of being used, without material alteration, to carry out the Jones process, it is evident that the defense of anticipation by prior patents rests upon a slender foundation." (C. D., 1902, 609).

The broad novelty of the apparatus was relevant to the patentability of the process; notwithstanding the fact that—

"a process patent can only be anticipated by a similar process" (same case, page 608);

but possibly in view of the fact that it would not be invention to make such use of an old apparatus as—

"would have occurred to one whose duty it was to make practical use of the mechanism described" (same page).

Assume that Jones had had a prior patent of, say ten years' earlier date claiming the identical apparatus of his process patent in suit in Carnegie vs. Cambria, would or would not this court (after Underwood vs. Gerber) have treated such apparatus as "existing" and have said that there was no patentable novelty or invention in using an existing apparatus in the manner in which it was intended to be used?

Jones had an apparatus patent of the same date as that of his process patent in suit in Carnegie vs. Cambria; but it bore a higher number and so was apparently non-existent when the process patent was granted.

If separate patents for process and apparatus are to be granted, they are liable to be issued years apart.

"It is not overlooked that a patent for this process to

issue six years after a patent for an apparatus which is the only present known means for carrying out this process, may in effect prolong the appellant's exclusive use of the process by this considerable period. This resulted from the enforced division of the application, and is not attributable to the conduct of the appellant, whose original proposal was to take but one patent for both process and apparatus as related inventions" (case of Holt, C. D., 1894, 82, 86 and 87; John S. Seymour, Commissioner).

Applicants can not always effect the issue of the process patent and the apparatus patent on the same day.

"This is a petition that the above-entitled application including process claims be withdrawn from issue to await the conclusion of an interference relating to a companion application including apparatus claims.

"The petitioner wishes the two patents to issue on the same day and expresses the fear that if one precedes the other the courts may regard the second as invalid in view of the first. The process and the apparatus can be included in separate patents only because they constitute separate inventions, and it is believed that the validity of those patents is not affected by the question whether they are issued on the same day. Two patents for the same invention can not be issued on the same day any more than on succeeding days, and it is only upon the conclusion that the inventions are separate that two patents are granted.

"There seems to be no good reason why this Office should withdraw the above-entitled application from issue and cause the indefinite delay which would be necessary to await the result of the interference. (*Ex parte* Atwood, C. D., 1888, 174; 44 O. G., 341.)

"The petition is denied" (case of Stuart, C. D., 1904, 485 and 486; F. I. Allen, Commissioner).

Whether two patents for process and for apparatus, respectively, each making identically the same disclosure,

would or would not be valid, it is plain that they are not the same in law as one patent covering both process and apparatus. The statute gives to each applicant the right particularly to point out and distinctly to claim each and every part, improvement or combination which he is required by law to disclose in his written description; and it is no justification of a refusal to grant such right to allege that two patents would be equally as good or even better. No denial has been made of Frasch's allegation, with respect to the requirement of division, that—

> "the sole reason given for this * * * is * * * the mere presence in the application of *claims* to process and apparatus respectively, the *description* of both being proper and, indeed, necessary." (Record, page numbered 23 in red ink.)

Any rule which divorces from the claim what the statute requires to be joined in the description is inconsistent with law; because it forbids what the statute allows and in effect directs, whether it requires it or not. There is no express provision of law for reserving matter disclosed in one patent to another patent thereafter to be granted. If an applicant attempts such a reservation he acts at his own risk and peril. A concurrently pending application will not always suffice. A rule which should require an applicant either to abandon a claim outright or else to rely on its reservation by a concurrently pending application (rule 44 forbids reservation clauses) is inconsistent with law and beyond the power of the Commissioner to prescribe.

Rule 41, as construed by the Patent Office and the Court of Appeals, D. C., does so require; for, as construed by them, this rule excludes all joinder of process claims and apparatus claims when either of the inventions is capable of separate use; although they are designed for joint use

and must both of them be disclosed in order to tell the whole truth with respect to either. As thus construed, rule 41 is clearly invalid.

The right to join related inventions, which is given by the statute (as held by this court in United States vs. Allen and *ex parte* Frasch, 192 U. S., 543 and 566), is broader than permitted by said rule, however it may be construed; and the rule, under any construction, is invalid.

The fact that appellant calls in questions the validity of rule 41 when it is given the construction which the Patent Office and the Court of Appeals, D. C., placed upon it shows that this court has jurisdiction on appeal on the ground that the Court of Appeals, D. C., in a final judgment or decree has found such a rule to be in force and that the validity of this so found authority is drawn in question (Sec. 233 of Code D. C.). If this court should agree with appellant's contention that rule 41 has been misconstrued, such agreement would not oust the jurisdiction on appeal; because the rule as misconstrued is an actual authority exercised under the United States; and its validity is called in question by the appeal herein to this court.

It is also contended by appellant that rule 41 is incapable of a construction which would make it consistent with law in respect to the division which it requires. The joinders which it permits are in accordance with law; but it forbids joinders which the law authorizes. It denies rights of joinder given by the statute and held by this court in United States vs. Allen to be so given.

V.

Rule 41 attempts to fix the substantial rights of applicants; and hence it is beyond the power conferred by section 483 of the revised statutes.

This section reads:

> "The Commissioner of Patents, subject to the approval of the Secretary of the Interior, may from time to time establish regulations, not inconsistent with law, for the conduct of proceedings in the Patent Office."

The substantial rights of applicants can not be affected by the mere conduct of proceedings; rule 41 attempts to deny the right of joining inventions in one application and patent except as pointed out in the rule; and

> "the right denied is substantial" (192 U. S., 543).

In view of the fact that two patents are not the equivalent in law of one patent and that different proceedings are required to obtain the protection given by them, respectively (see pages 62 and 94 to 99 of this brief), no other conclusion seems possible.

If the statutory conditions should give a certain liberty in respect to embracing given subject-matter in two patents or in one patent, the option so given is the property of the inventor and not of the Patent Office.

Section 4916 R. S., provides in respect to reissues that—

> "the Commissioner may, in his discretion, cause several patents to be issued for distinct and separate parts of the thing patented, upon demand of the applicant";

but this gives him no right to make regulations enacting when and under what conditions an original application shall be held to cover or not to cover—

> "more devices than could properly be made the subject of a single patent" (Romadka vs. Sessions, 145 U. S., 29, 40).

The thing which the statute was guarding against was not the inclusion of too much in a single grant, but the splitting up of claims for parts which should not be "distinct and separate." In allowing division on reissue, the Commissioners went so far that the courts had difficulty in sustaining the reissues.

The discretion referred to in Goodyear vs. Waitt, 5 Blatchford, 468, and Bennett vs. Fowler, 8 Wallace, 445, was just this authority to refuse or to allow a reissue applicant's demand for divisional patents. It recognizes no authority in the Commissioner to demand a division against the desire of the applicant.

But whatever may be the discretion referred to in section 4916 R. S., it has no effect to modify section 483 R. S. so as to make this latter apply to anything more than the *conduct* of *statutory* proceedings to secure *statutory* rights. It does not apply to rights of joinder of claims. Section 4886 R. S. provides for obtaining a patent

> "upon payment of the fees required by law, and other due proceedings had."

Section 483 R. S. does not mean that the Commissioner shall increase the fees at will by the device of requiring division; nor does it mean that he can by such device substantially change the *statutory* proceedings whose *conduct* he is called upon to regulate.

VI.

With or without rule 41, the decisions below are erroneous; because they require division between inventions which the statute gives the right to join.

In what precedes it has been shown (1) that Rule 41

allows Frasch's process claims to be joined with his apparatus claims in the present application, at least when said rule is properly construed (pages 69 to 81 of this brief); (2) that rule 41, when so construed, does not give a larger right of joinder than is permitted by statute (pages 81 to 85); and that, in fact, said rule, even when properly construed, denies rights of joinder given by the statute (pages 85 to 100). In these discussions, it has been necessary to consider the right of joinder in general and Mr. Frasch's right herein in particular. His process and apparatus being related and dependent inventions, which the statute gives him the right to join, as demonstrated in previous pages of the brief, it follows that the decisions below are at the least erroneous, rule or no rule.

VII.

With or without rule 41, the decisions below are the exercise of an invalid authority; because they decide matter not submitted by law to be passed upon by either the Patent Office or the courts.

The matter which has actually been passed upon is the right of an applicant in general, and by consequence of Frasch in particular, to claim severally in his summing up a process and an apparatus which the statute requires him to disclose in the descriptive portion of his specification in order to exhibit the whole truth with respect to a new and original improvement in the useful arts.

> "Whoever discovers that a certain useful result will be produced in any art, machine, manufacture or composition of matter by the use of certain means is entitled to a patent for it" (O'Reilly vs. Morse, 15 How., 119).

> "An art may require one or more processes or machines in order to produce a certain result or manufacture" (Corning vs. Burden, 15 How., 267).

It may also require both a process and an apparatus.

> "Most processes which have been held to be patentable require the aid of mechanism in their practical application" (Risdon vs. Medart, 158 U. S., 68).

Hence most applications for patents involving processes necessarily involve mechanism also. In some cases the disclosed mechanism may be known by the applicant to be old. In such cases there would naturally be no claim to the apparatus. But if the parts, although old severally, had never been brought together before and had not all of them been used in an analogous and similar relation, a claim to the apparatus would not be excluded for lack of inventive novelty.

> "None of the elements or devices of the patented machine are new, and the invention itself consists in a combination of old devices. Such a combination is an entirety, though more than one combination can be included in the same patent." (Bates vs. Coe, 98 U. S., 31.)

The apparatus, although new as an entirety, may be composed of elements well known severally; and their new manner of combination may be suggested by the process. Of this character seems to have been Neilson's apparatus, if it should be assumed that a blowing apparatus had before been combined with a furnace and that an air heater had been used in non-analogous or dissimilar relations.

But in very many cases, in order to accomplish an inventor's design, the elements to be combined, as well as the combination as an entirety, must differ from anything previously

known or used, or patented or described in a printed publication.

According to the case, therefore, the inventors of processes in most cases disclose also appropriate apparatus new in their entirety or in part and as entireties. Compliance with the law demands such disclosure. Assuming that their disclosures do comply with the law, what duty does the law put upon the Patent Office with respect to the claims which the respective inventors shall make to the various parts, improvements and combination involved in their disclosures? The answer is, None at all, so far as the joinder of the claims is concerned. No division in respect to the matters disclosed is possible; because compliance with the statute demands their united disclosure.

Under Section 4893 R. S., requiring an examination to determine whether or not a—

> "claimant is justly entitled to a patent under the law";

the Patent Office doubtless may reject an application on the ground that it includes—

> "more devices than could properly be made the subject of a single patent" (Romadka vs. Sessions, 145 U. S., 29, 40);

but the assumption, made above, is that the actual disclosures are such as the law demands. Under that assumption, he could not, of course, rightly reject such an application for including too much in its disclosure. He could not rightly reject an application merely for complying with the law. Would he, however, be called on by the statute in any case to reject for misjoinder the claims which point out what the applicant claims within a disclosure demanded by the statute? Frasch contends that he would not; that what an applicant is by statute required to disclose in a given specifica-

tion. he is permitted at least (if he be not directed and indeed required) to claim in the same specification. So far as the question of misjoinder is concerned, the Patent Office is confined to the descriptive part of an applicant's specification. to the concrete subject-matter of the disclosure. When that is unitary, all the claims which can be founded thereon are permitted at least to be joined in the summing up.

In other words, in rejecting for misjoinder of claims an application whose specification complies in its descriptive portion with the statute, the Commissioner has passed upon a question not submitted to his decision in any way. He is usurping a privilege given by the statute to the applicant alone.

An inventor's right to matter first disclosed in a patent specification is abandoned unless claimed therein or preserved by a reservation clause therein or by a concurrently pending application (James vs. Campbell, Mahn vs. Harwood, this brief, pages 90 and 91). Where an applicant is compelled by law to join inventions in his disclosure, he resorts to a reservation clause or to a concurrently pending application at his own risk and peril. The law does not compel him thereto and the Patent Office has no valid authority so to do.

In the present case, in his answer to his first official letter, Frasch alleged that the rejection was based solely on—

> "the mere presence in the application of *claims* to process and apparatus respectively, the *description* of both being proper and, indeed necessary." (Record, page numbered 23 in red ink.)

This allegation has never been questioned; and, if it were questioned, could be seen to be correct, on the face of the papers.

The Patent Office and the Court of Appeals, D. C., by their decisions herein force Frasch into the dilemma of

either abandoning one part of his claims or of attempting to reserve his right thereto by a concurrently pending application, reservation clauses being not now permitted (Rule 44). The law never submitted to decision by the Patent Office the question whether an applicant should or should not in a given specification join claims covering all the new and useful inventions which the law requires him to disclose therein. In making a decision on this question, an invalid authority under the United States was exercised; and the present case, calling the validity of that authority in question, is cognizable in this court upon writ of error or upon appeal under section 233 of Code D. C.

In view of the fact that an application for patent has somewhat the nature of a bill for specific performance, and of the statement by this court in United States *ex rel.* Bernardin vs. Duell that—

> "we think that, under the circumstances, the remedy by appeal existed" (172 U. S., 576),

it would seem that appeal and not error was appropriate; but both remedies have been pursued; and if neither of them should be open to Frasch, the case can properly be brought into this court by writ of certiorari (Sec. 234, Code D. C.) for which a petition is pending.

VIII.

The decisions below necessarily found a statute of Congress authorizing rule 41 of the Patent Office to exist and to be valid; but such statute does not exist; and, if it should exist, it would be invalid; because said rule is the exercise of legislative power which Congress is not authorized to delegate; and for each of these reasons the decisions below are without authority, rule or no rule.

The decisions below are founded on the proposition that a process and an apparatus which are either of them capable of separate use are not dependent on each other and can not under rule 41 be both of them claimed in the same patent application. But capacity for separate use is something essentially different from independency, as shown in the earlier part of this brief, pages 19 to 85. As so shown (see pages 49, 55 and 56, 74 and 75, 79, 84, 87), it is essentially different from the mutual dependency, with mutual contribution to a single result, prescribed by rule 41 as a condition of joinder.

Rule 41, whether it does or does not limit joinder of process and apparatus to those which are not only used together, but are both of them incapable of separate use, and the rulings below which do so limit joinder, are attempts to exercise power of legislation by the executive or judicial power or both. Sec. 483 R. S., does not attempt to delegate such power with respect to the right and remedies of applicants for patents (pages 101 and 102 of this brief); and it is understood to be the only section relied upon to authorize rule 41. No statute of the United States, therefore, exists giving the authority exercised in enacting this rule. Nor, if the statute existed, would it be valid.

> "No legislative body can delegate to another department of the government, or to any other authority, the power, either generally or specially, to enact laws. The reason is found in the very existence of its own powers. This high prerogative has been intrusted to its own wisdom, judgment, and patriotism, and not to those of other persons, and it will act *ultra vires* if it undertakes to delegate the trust, instead of executing it" (Cooley's General Principles of Constitutional Law, page 97, citing Locke on Civil Government, section 142; Barto vs. Himrod, 8 N. Y., 483; Rice vs. Foster, 4 Harr, 479; Cooley, Const. Lim., 4th ed., 141-152).

True it was said by the Examiners-in-chief:

> "The presumption on the face of the statute is that two inventions, a machine and an art are not one invention. Whoever asserts that those essentially different inventions become in any case one invention, must establish their unity as one invention" (Record, p. 63, near middle of page);

but there is no pretense of finding incapacity for separate use in the statute as a test of identity. This court held that the statute gives the right to join related inventions and that a rule of the Patent Office

> "in so far as it requires a division between claims for a process and claims for an apparatus, if they are related and dependent inventions, is invalid. (Ex parte Frasch, 192 U. S., 566; referring to United States vs. Allen, 192 U. S., 543.)

None of the lower tribunals has found in the construction of the statute by this court any support for the holding that only processes and apparatus incapable of separate use can be joined in the same patent application. It is a holding not founded on the statute, but on a power of legislation assumed to be delegated by Congress, but, in fact, not delegated and not able constitutionally to be delegated. The rule, the rulings and the assumed statute of Congress involve the exercise of authority under the United States which is called in question in these proceedings so as to give this court jurisdiction on appeal or in error.

IX.

Any statute of Congress is unconstitutional which authorizes more than one exclusive right in a process and apparatus both of which are necessary to complete the disclosure of an invention calculated to promote the progress of science and the useful arts.

In United States vs. Allen, this court stated that

> "if the classification of the statute makes a distinction between the different kinds of inventions—between a process and an apparatus—and requires or permits a separate application for each, it would seem to follow irresistibly that an application and patent for one would not preclude an application and patent for the other, and the order of the application could not affect the right which the law confers." (192 U. S., 543.)

Possibly this means that separate patents would be permissible in all cases where the classification of the statute makes a distinction; but, on the other hand, it is said that James vs. Campbell, which involved distinctions of process and apparatus

> "indicates what embarrassment and peril of rights may be caused by a hard and fixed rule regarding the separation of related inventions."

It may well be doubted, therefore, whether the statutory distinction does, in the mind of this court, permit separate patents in all cases; since embarrassment would not theoretically be caused by complying with the statute; although in these present proceedings the whole difficulty has resulted from Frasch's compliance with the statute. But, even if there were no doubt touching the statutory permission, it would seem proper to suggest that separate patents would not be permissible under the Constitution in all cases; even if a statute of Congress should permit them. It is contended by Frasch, however, that he would have the right to join both, even if separate patents should be permissible. In that case he would have an option which the decisions below deny. But if separate patents should not be permissible, his right of joinder would not be questioned, even in the Patent Office.

Moreover, it does not seem to follow that a distinction in the statute between a process and an apparatus necessarily permits two patents. In fact, the reason which will be suggested as making such permission unconstitutional would forbid a construction of the statute which would give it.

Before suggesting said reason, it is proper to make a distinction between the securing of one exclusive right in given matter by two or more documents and the securing of two exclusive rights in such matter or in parts thereof. So far as the number of documents is concerned, which may be necessary to perfect a right, Congress is understood to have ample power of legislation; but its power to secure a second exclusive right in any part of the same matter, while a prior right therein is in force, is questioned.

When the Patent Office grants a second patent for the same invention, even to the same party on the same day, it does not inure to the owner of the first granted patent. The two do not become one patent with two claims, even under these circumstances. See cases cited on pages 59 to 67 of this brief. A fee simple absolute in law may result from many deeds; but two fees simple absolute cannot exist in the same land. This Court has construed each patent to give what corresponds with a fee simple absolute in the thing patented; and it has held the later granted of two patents for the same invention to be invalid (Miller vs. Eagle, 151 U. S., 186; and cases there cited). If the later grant merely perfected or supplemented the first, both patents might have been valid. That both are not valid seems to consist only with the proposition that the two patents are unrelated and independent franchises.

Such franchises cannot validly exist together in respect to all or to parts of the same matter; and the later grant is invalid, for the reason that

"A grant, in its own nature, amounts to an extinguish-

> ment of the right of the grantor and implies a contract not to reassert that right" (Fletcher vs. Peck, 6 Cranch, 137, as quoted by counsel in Van Hoffman vs. City of Quincy, 4 Wallace, 535, 538.)

Even if the first grant were accompanied by a reservation, this latter would be void, because inconsistent with the grant (Miller vs. Eagle, 151 U. S., 186, as above).

When an exclusive right is once validly granted, the power of the grantor over the matter granted, be the grantor Congress or the Patent Office acting under statutes of Congress, is extinguished during at least the existence of such grant.

> "Congress are not empowered to grant to inventors a favor, but to secure to them a right. And the term 'to secure a right' by no possible implication carries with it the opposite power of destroying the right in whole or in part." * * * (Court of Claims in McKeever vs. U. S., C. D., 1883, 232, 235; affirmed by Supreme Court U. S., C. D., 1883, 243.)

Of course, the grant of an exclusive right in a constitutional discovery does not extinguish the right subsequently to grant an exclusive right in an independent, unrelated constitutional discovery; but what is or is not such an unrelated, independent discovery cannot arbitrarily be decreed by Congress or by the Patent Office. It must be determined by construction of the Constitution itself. An improvement grafted on a prior invention will support a later patent (Smith vs. Nichols, 21 Wallace, 112); for it leaves the prior grantee free to carry out his invention in the precise mode specified in the prior grant; and hence does not conflict with the doctrine that ordinarily the grant of a power

> "includes all authority essential to its due exercise" (ex parte Milligan, 4 Wallace, 3, 139).

A process patent discloses, ordinarily and in most cases necessarily, an apparatus for use in carrying it into effect, which apparatus is thus shown as the means, and in most cases the sole known means, appropriate to the purpose. When by a patent the United States granted the exclusive right to make, use and vend such process, is it not essential to the due exercise of such exclusive right to be free from a later granted monopoly of the identical apparatus exhibited in the patent in order to show that the process is useful, especially if said apparatus should be the sole known means through whose aid it can be practically applied? And in this connection it is to be observed that the exclusive right to make, use and vend such apparatus (if proper at all to be separately secured) might not be granted for years after the process was patented. See page 98 of this brief.

It is, of course, possible that A may invent a process, with apparatus appropriate; that he may then invent an improved apparatus; and that he may in his specification disclose the improved apparatus only. Then, after A has his patent, B may apply and upon interference (Sec. 4904 R. S.) may prove priority over A; so that B obtains a patent on the improved apparatus. In such case, A's patent would only be void, if at all, by reason of a defective or insufficient specification (failure to disclose his first apparatus) and he might or might not be entitled to a reissue (Sec. 4916 R. S.). Whatever A's rights, however, under these circumstances, it would not follow that Congress could reserve to itself the general power to grant one exclusive right for a process and another for the ordinary (possibly the sole) *means of carrying it into effect*.

A constitutional discovery involves both contrivance and disclosure.

> "Here it is evident that the 'discoveries' the use of which is to be secured are the discoveries of inventors

> only. The applicant must invent, contrive or produce something that did not exist before. A man may discover (i. e., may disclose) his invention; and for that discovery or disclosure he is entitled to the exclusive use of his invention for a limited time." (Judge Cranch in ex parte Kemper, Patent Office Report for 1847, pages 797-798, copy in scientific library of Patent Office).

A disclosure without contrivance is not protectible any more than a contrivance without disclosure.

Whenever the apparatus is required to be included in the disclosure of a process (or conversely) in order to have something which is capable of use and may in consequence be calculated to promote the progress of science and the useful art, may not both be regarded as one discovery (disclosure) in respect to which, with all its parts, the constitution allows but one exclusive right?

If, however, the classification of the statute should permit separate patents in all cases of process and apparatus, the decision in United States vs. Allen (192 U. S., 543) is express that it does not require them, when the process and the apparatus are related and dependent inventions, and that the Patent Office has no right to refuse to allow the joinder of such inventions in one patent.

RECAPITULATION.

These proceedings arise out of the assertion by Herman Frasch of the right to join his claims for a process in the same patent application with his claims for an apparatus, they being related and dependent inventions;

pages 1 to 6 of this brief.

In this case there is drawn in question not only the construction, but also the validity, of a statute of, or an authority exercised under, the United States, and hence a writ of

error or appeal lies from the final judgment or decree of the Court of Appeals, D. C.; but for further assurance Frasch has prosecuted both a writ of error and an appeal and has pending also a petition for certiorari; pages 7 to 18.

The essential foundation of the adverse decisions below is the doctrine that a process and an apparatus designed to be used together and co-operating in accomplishing new and useful results when so used are not dependent on each other, if either of them should be thought capable of separate use, although such separate use may not be intended by or known to the inventor and may involve changes in form, if not in substance, of the separately employed part or parts, and although the invention, when so used, would not accomplish the design of the inventor and might accomplish no new and useful result; and said doctrine is radically erroneous; pages 18 to 68.

Rule 41 of the Patent Office, at least when properly construed, allows the Frasch's process claims to be joined in the same application with his apparatus claims; pages 69 to 81.

Rule 41, however construed, does not give a larger right of joinder than is permitted by statute; pages 81 to 85.

Rule 41 does restrict the right of joinder given by the statute, and is invalid for that reason; pages 85 to 100.

Rule 41 attempts to fix the substantial rights of applicants and hence is without authority of law; section 483 of the revised statutes U. S. merely relating to the *conduct* of *statutory* proceedings in the Patent Office; pages 100 to 102.

With or without rule 41, the decisions below are erroneous; because they require division between inventions which the statute gives the right to join; pages 102 and 103.

With or without rule 41, the decisions below are the exercise of an invalid authority; because they decide matters not submitted by law to be passed upon either by the Patent Office or by the courts; pages 103 to 107.

The decisions below necessarily found a statute of Congress authorizing rule 41 of the Patent Office to exist and to be valid; but such statute does not exist; and, if it should exist, it would be invalid; because said rule is the exercise of legislative power which Congress is not authorized to delegate; and for each of these reasons the decisions below are without authority, rule or no rule; pages 107 to 109.

Any statute authorizing rule 41, at least if this be construed as it has been in the decisions below, or if it be given any construction which should require a division of Frasch's claims, would be invalid; because Congress is not empowered by section 8 of article I of the Constitution of the United States to grant more than one exclusive right in the same constitutional discovery; and for the same reason any statute authorizing the decisions below, with or without rule, would be invalid for want of constitutional power in Congress to authorize the same: pages 109 to 114.

The jurisdiction of this court is referred to in the present brief on pages 1 to 18, 88, 100, 101, 103, 107, 109.

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WASHINGTON, D. C., *March*, 1908.

In the Supreme

Herman Frazer

Frederick

Appeal from the

Brief

In the Supreme Court of the United States.

OCTOBER TERM, 1907.

HERMAN FRASCH, APPELLANT AND PLAINTIFF IN ERROR,
v.
FREDERICK I. ALLEN, COMMISSIONER OF PATENTS.
No. 211.

APPEAL FROM AND IN ERROR TO THE COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA.

BRIEF FOR THE UNITED STATES.

This controversy, respecting a requirement of division by the Patent Office on an application for patent, between process and apparatus claims (six in all, three of each), has been before the court at an earlier stage (*Ex parte Frasch*, 192 U. S., 566), wherein it was held that mandamus to the Commissioner of Patents and not to the Court of Appeals is the proper remedy to compel the forwarding of an appeal to the board of examiners in chief from the primary examiner, following *Steinmetz* v. *Allen*, id., 543. The previous history of this case is set forth in the opinion in *Ex parte Frasch*. Thereafter the applicant asked

the Commissioner to direct that the appeal theretofore taken to the examiners in chief be heard by them. (Rec., p. 45.) The Commissioner granted this petition. (pp. 46–48.) The primary examiner furnished the required statement and a supplementary statement of the grounds of his decision requiring division. (pp. 48–51, 53–55.) The examiners in chief affirmed the decision of the primary examiner "requiring a division of these claims for an art and for an independent machine used to perform the art;" one examiner in chief dissenting held that division should not be required. (pp. 55–72.) On appeal to the Commissioner, he affirmed the examiners in chief in part only; that is to say, he held that process claim No. 1 must be divided from the other process claims and the apparatus claims but that process claims Nos. 2 and 3 and the apparatus claims Nos. 4, 5, and 6 might be joined in one application (pp. 81–83). Rehearing was denied (pp. 83–86), and an appeal was taken to the Court of Appeals for the District of Columbia, which affirmed the decision of the Commissioner of Patents (pp. 88–93), and an appeal to this court followed, the petition for appeal and a writ of error as well being granted by the court below in order to test the question before the court of last resort, but with hesitation because of the belief that the case was not appealable. (Per Mr. Chief Justice Shepard, p. 97.) The assignment of errors appears on page 93 of the record.

I.

JURISDICTION AND DISMISSAL ON THAT GROUND.

(a) *As to the jurisdictional act.*—There is attempted to be drawn in question in this case the validity of an authority exercised under the United States, namely, the validity of Rule 41 of the Patent Office. Assuming that the validity of that rule is properly drawn in question, the court has no jurisdiction because "there is no money in dispute nor anything to which a pecuniary value has been given." (*Steinmetz* v. *Allen*, 192 U. S., 543, 555.) In that case, however, which is identical with this as to the present point, the court went on to hold that under section 8 of the act of February 9, 1893 (27 Stat., 434), giving an appeal to this court in all causes in which is drawn in question the validity of an authority exercised under the United States, the rule in question was such an authority, its validity was assailed, and the court therefore had jurisdiction. But the court's attention does not seem to have been called to the fact that previous decisions respecting that statute held that in the causes embraced by it there must be *some* pecuniary amount involved in order to sustain a writ of error or appeal thereunder. The statute provides:

> That any final judgment or decree of the said Court of Appeals may be reexamined and affirmed, reversed, or modified by the Supreme Court of the United States, upon writ of error or appeal, in all causes in which

> the matter in dispute, exclusive of costs, shall exceed the sum of five thousand dollars, in the same manner and under the same regulations as heretofore provided for in cases, of writs of error on judgment or appeals from decrees rendered in the Supreme Court of the District of Columbia; and also in cases, without regard to the sum or value of the matter in dispute, wherein is involved the validity of any patent or copyright, or in which is drawn in question the validity of a treaty or statute or of an authority exercised under the United States.

In *Chapman* v. *United States* (164 U. S., 436), which was a criminal case, the court, referring to the similarity between the act of March 3, 1885 (23 Stat., 443), and the statute of 1893 now in question, held that the two laws were the same in their meaning and legal effect, saying:

> The meaning of both statutes is that in the cases enumerated the limitation of the amount is removed, but both alike refer to cases where there is a pecuniary matter in dispute, *measurable by some sum or value.* (P. 450.)

The enumeration of cases in the act of 1885 is substantially the same as in the act of 1893, and the court, referring to the earlier act, said: "We think, as that section clearly applied to cases where there was a pecuniary matter in dispute, *measurable by some sum or value*, as has been repeatedly decided, the last clause of section 8 of the act of 1893 must receive the same construction." (Ib.)

The application there was that although a punishment for conviction by that criminal statute embraced a fine, there was not a sum of money in dispute within the meaning of the law, citing Chief Justice Marshall in *United States* v. *More* (3 Cranch, 159, 173).

In *Sinclair* v. *District of Columbia* (192 U. S., 16), which was also a criminal case within the police court jurisdiction, involving a fine as well as committal to the workhouse, the court quoted with approval the above passage from *Chapman* v. *United States*, and affirmed the judgment therein.

In the recent case of *New Mexico, ex rel., etc.*, v. *Denver & Rio Grande R. R. Co.* (203 U. S., 38), the appeal was taken under the above act of March 3, 1885, which applies to appeals to the Supreme Court of the United States from the supreme courts of the Territories as well as (formerly) to appeals from the Supreme Court of the District of Columbia. The matter there in dispute was "the right to have the goods which were tendered for shipment transported to their destination." An alternative writ of mandamus had been issued, which was quashed, and the appeal was brought to review that judgment. This court, holding that the enforcement of a territorial law involves the validity of an authority exercised under power derived from the United States, said: "Is there any sum or value in dispute in this case? While the act does not prescribe the amount, *some sum or value must be in dispute.*" (Citing *Albright* v. *New Mexico*, 200 U. S.,9.)

It was, however, held there that because the right to have goods transported by a common carrier to the place of destination is a valuable right, measurable in money, giving at common law a cause of action against the carrier if there were a refusal to transport, the controversy involved a money value within the meaning of the statute. But the point now emphasized is the reiteration by the court in this recent decision that under such a jurisdictional act some sum or value must be in dispute.

In the *Albright* case, as cited, it was held that in proceedings in *quo warranto*, in which the alleged usurpation of an office is a matter in dispute with a liability to fine on a judgment of ouster and a possible effect of such judgment in a later action to recover the emoluments of the office, does not make that matter measurable by some sum or value in money, and an appeal to this court will not lie under either section of the act of 1885.

It will be observed that the effect of the rulings of the court both regarding the act of 1885, where the categories of the causes embraced were stated in two sections, and the act of 1893, where they were combined in one, is that the jurisdictional limitation of amount applies to all of the different classes of cases enumerated, and this is particularly shown by the court's repudiation in the *Chapman* case of the argument that the words "and also" in section 8 of the act of 1893, which introduce the provision as to cases involving the validity of a patent or a copyright, treaty or statute, or the validity of an authority

exercised under the United States, are to be interpreted in accordance with the immemorial and precise meaning of the technical pleading term "*ac etiam*" as introducing a new and independent subject intended to stand by itself, the court deciding, in substance, that on the contrary the restriction of jurisdictional amount—some jurisdictional amount—proceeds throughout the statute.

It seems quite certain, therefore, that in order to rest jurisdiction upon this act in a case involving the validity of a patent or copyright, or drawing in question the validity of a treaty or statute or of an authority exercised under the United States, there must be some sum or value in dispute, just as clearly as, in the other cases embraced by the law in which the final judgment or decree may be reexamined and affirmed, reversed or modified by this court, the matter in dispute, exclusive of costs, must exceed the sum of $5,000.

Finally, the validity of a patent or copyright, and the result of the validity of a law of the United States or of an authority exercised under the same, may ultimately and indirectly affect the parties to a cause in very large sums of money, but this is a remote and indirect or underlying effect. A complaint in equity to obtain an injunction may result in a decree upon final hearing commanding or forbidding certain action which will by its indirect effect gain or lose for the parties large values in money or property; but it cannot be said in any concrete and direct sense that such proceeding involves any sum or value in

dispute which is definite and measurable. So an interlocutory proceeding like this respecting a patent may mean in its ultimate and indirect result the gain or loss of a fortune to the applicant; but the immediate question is simply whether the proceedings shall take one course under the rules or another, and that question involves no sum or value in dispute, and the remote and final consequences cannot be regarded in determining the jurisdictional point.

If it should be granted that the validity of a patent or copyright necessarily involves value, although sum or value in any certain or determinate sense is not in dispute, but simply the abstract question of the existence or nonexistence of a fundamental right; still, even so and *a fortiori*, it cannot possibly be predicated of the naked question of the validity of a law or treaty or Federal authority that a sum or value is at stake as a concrete and measurable matter, but only contingently, indirectly, and remotely.

(b) *The judgment below is not final.*—But there is another point on jurisdiction requiring dismissal, as we contend. The judgment of the Court of Appeals is not final; it merely ended an interlocutory stage of this controversy and sent the applicant back to the Patent Office to conform to the meaning and effect of the rule on division of claims as construed by the Commissioner of Patents, and to pursue the application in the form required to final grant or rejection.

In *Rousseau* v. *Brown* (21 D. C. App., 73), which was an appeal from the Patent Office in the matter

of an interference between two applications, the court affirmed the decision of the Commissioner of Patents, ruling against one of the claims on the ground that priority of invention must be awarded to the other claimant, and said:

> There is no final judgment of this court rendered in such cases, nor is there any such judgment required or authorized to be rendered, not even for costs of the appeal. This court is simply required in such cases, after hearing and deciding the points as presented, instead of entering judgment here, to return to the Commissioner of Patents a certificate of the proceedings and decision of this court, to be entered of record in the Patent Office, to govern the further proceedings in the case. But it is declared by the statute that no opinion of this court in any such case shall preclude any person interested from the right to contest the validity of any patent that may be granted by the Commissioner of Patents. (Rev. Stats. U. S., secs. 780, 4914.)
>
> There is no provision of any statute, within our knowledge, that authorizes a writ of error or an appeal to the Supreme Court of the United States in such case as the present. It would seem clear that the case is not within the purview of section 8 of the act of Congress of February 9, 1893, providing for the establishment of this court. That section only applies to cases where final judgments by this court have been entered, and not to decisions to be made and certified to the Patent Office, under the special directions of the statute.

> We must therefore decline to allow either a writ of error or an appeal to the Supreme Court; but this disallowance of the writ of error or appeal by this court will not in any manner prejudice any application that the party may think proper to make to any one of the justices of the Supreme Court for the allowance of writ of error or appeal.

Now, the grant of jurisdiction to the courts of the District of Columbia was at first that—

> The Supreme Court, sitting in banc, shall have jurisdiction of and shall hear and determine all appeals from the decisions of the Commissioner of Patents in accordance with the provisions of sections forty-nine hundred and eleven to forty-nine hundred and fifteen, inclusive, of Chapter one, Title LX, of the Revised Statutes, "Patents, Trademarks and Copyrights." (Sec. 780, Rev. Stat. Relating to the District of Columbia.)

And the law now is that this special jurisdiction has been transferred to and vested in the Court of Appeals; "and in addition, any party aggrieved by a decision of the Commissioner of Patents in any interference case may appeal therefrom to said Court of Appeals." (Sec. 9, act of 1893, *supra*.)

Previously, the decisions of the Patent Office on an interference between applications was final (Rev. Stat., sec. 4911); but now such a proceeding as well as other decisions of the Commissioner are reviewable by the Court of Appeals as thus substituted for the Supreme Court of the District, and the law

applicable is section 4914, Revised Statutes, which provides:

> The court, on petition, shall hear and determine such appeal, and revise the decision appealed from in a summary way, on the evidence produced before the Commissioner, at such early and convenient time as the court may appoint; and the revision shall be confined to the points set forth in the reasons of appeal. After hearing the case the court shall return to the Commissioner a certificate of its proceedings and decision, which shall be entered of record in the Patent Office, and shall govern the further proceedings in the case. But no opinion or decision of the court in any such case shall preclude any person interested from the right to contest the validity of such patent in any court wherein the same may be called in question.

By section 4915 a remedy by bill in equity is given where a patent is refused, and the last line of that section refers to the "final decision," evidently meaning the judicial decision upon a bill in equity. I give that section in full:

> SEC. 4915. Whenever a patent on application is refused, either by the Commissioner of Patents or by the supreme court of the District of Columbia upon appeal from the Commissioner, the applicant may have remedy by bill in equity; and the court having cognizance thereof, on notice to adverse parties and other due proceedings had, may adjudge that such applicant is entitled, according to law, to receive a

> patent for his invention, as specified in his claim, or for any part thereof, as the facts in the case may appear. And such adjudication, if it be in favor of the right of the applicant, shall authorize the Commissioner to issue such patent on the applicant filing in the Patent Office a copy of the adjudication, and otherwise complying with the requirements of law. In all cases, where there is no opposing party, a copy of the bill shall be served on the Commissioner; and all the expenses of the proceeding shall be paid by the applicant, whether the final decision is in his favor or not.

Thus we think it manifest that in interference cases and in all others going up from the Commissioner to the Court of Appeals there is no final judgment in the cause, but one interlocutory in its nature and binding only upon the Commissioner "to govern the further proceedings in the case." The opinion or decision of the court reviewing the Commissioner's decision is not final, because it does not preclude any person interested from contesting the validity of the patent in court, and if the decision of the Commissioner grants the patent, that is the end of the matter as between the Government and the applicant; and if he refuses it and the Court of Appeals either sustains him or reverses him, that is the first point at which finality could be alleged, and even that is merely a qualified finality, for, as we have seen, the decision of that court may be challenged generally and a refusal of patent may be reviewed and contested by bill in

equity. So that, in conclusion, it is at least certain that a judgment like this on an intermediate point of procedure and practice, the result of which is simply to send the case back to the Patent Office, is not a "final judgment" under section 8 of the act of 1893.

II.

THE MERITS.

The question on the merits of this controversy is whether Rule 41 of the Patent Office as construed by this court requires division of the application between the process and apparatus claims. The rule was (Revision of Patent Office Rules of January 2, 1903):

> 41. Two or more independent inventions can not be claimed in one application; but where several distinct inventions are dependent upon each other and mutually contribute to produce a single result, they may be claimed in one application.
>
> CLAIMS FOR A MACHINE AND ITS PRODUCT MUST BE PRESENTED IN SEPARATE APPLICATIONS.
>
> CLAIMS FOR A MACHINE AND THE PROCESS IN THE PERFORMANCE OF WHICH THE MACHINE IS USED MUST BE PRESENTED IN SEPARATE APPLICATIONS.
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> CLAIMS FOR A PROCESS AND ITS PRODUCT MAY BE PRESENTED IN THE SAME APPLICATION.

The decision of this court in *Steinmetz* v. *Allen* (*ante*) was that "the statute [sec. 4886, Rev. Stat.] gives the right to join inventions in one application in

cases where the inventions are related, and it can not be denied by a hard and fixed rule which prevents such joinder in all cases."

The statement of the principle in *Ex parte Frasch* (id., 566) is as follows:

> We have just held in *Steinmetz* v. *Allen*, (*ante*, p. 543) that Rule 41 of the Patent Office, in so far as it requires a division between claims for a process and claims for an apparatus, if they are related and dependent inventions, is invalid.

As a result of these decisions, Rule 41 now reads (Revision of July 17, 1907):

> Two or more independent inventions can not be claimed in one application; but where several distinct inventions are dependent upon each other and mutually contribute to produce a single result, they may be claimed in one application.

The opinion in *Steinmetz* v. *Allen*, reviewing previous decisions, in which the question of joinder of two or more claims was involved in disputes over patentability, is careful to point out that the decisions recognize a distinction between a process and the means employed for using it, and that a patent for an art does not necessarily involve a patent for the particular means employed for using it, and approves the general statement of the doctrine that a process can not be joined with an apparatus nor either of these with a resulting product "unless they are to such an extent inseparable that the existence of some

one of them is dependent upon that of the others," recognizing a discretion in the Commissioner which is not unlimited and therefore is reviewable. The court declares that:

> Discretion can be exercised, and when exercised, we may say in passing, except in cases of clear abuse, the courts will not review it. But the rule as amended [meaning an earlier amendment into the form then before the court and not the present amendment], as we have said, precludes the exercise of any judgment and compels the separation of claims for a process and claims for its apparatus, however related or connected they may be. And the right denied is substantial.

I may remark here before proceeding that the court repudiates the contention that any embarrassment is caused to petitioner by insisting upon division, because, for instance, by disclosing the apparatus in his application for process he may lose the right to the patent for apparatus; the intimation to the contrary is plain enough, namely, that if process should be claimed in an independent application, it would not be adjudged to have been dedicated to the public by an apparatus patent.

In *Hogg* v. *Emerson* (6 How., 437) the patent was for a new and useful improvement in the steam engine, substituting continued rotary motion for crank motion, and, when used and applied in vessels, employing an improved spiral paddle wheel. These were forms of the same apparatus and principle or

process, applied to different objects and conditions, and so, naturally enough, to the objection that the letters covered more than one patent, the court's reply was that the devices relate to a like subject, or are in their nature or operation connected together, being all connected with the use of the improvements in the steam engine as applied to propel carriages or vessels, and that therefore they may be united in one instrument. And in the same case in 11 How., 587, 606, the court show that there are not two or more separate and independent inventions:

> They all here relate to the propelling of carriages and vessels by steam, and only differ, as they must on water, from what they are on land; a paddle wheel being necessary on the former, and not on the latter, and one being used on the former which is likewise claimed to be an improved one. All are a part of one combination when used on the water, and differing only as the parts must when used to propel in a different element.

In *Wyeth* v. *Stone*, 1 Story, 273 (Fed. Cas., No. 18107), there was a patent for a combined machine, an ice saw and cutter adapted to further and produce the same result and capable also of separate and independent use, the one being auxiliary but not indispensable to the other. The principles decided were that a single patent may be taken for several improvements on one and the same machine, or for two machines which are invented by the patentee and conduce to the same common purpose and object, although they are each capable of a distinct use and

application without being united together; but a single patent can not be taken for two distinct machines not conducing to the same common purpose and object but designed for totally different and independent objects.

These illustrations and other such typical cases in which joinder of claims was permitted relate to machines or improvements in machines as to which it is manifest that several parts which *might* be used separately nevertheless combine to form one integral whole and produce a joint product or result.

But where process as a distinct conception and not as a mere method of operation comes in, or the product of a process, the case is not so obvious; even where there is a close connection and relation different and additional considerations are presented. The demand that one shall be not only auxiliary to the other but indispensable, that the process can only work out in the particular way by the special apparatus, and that the process is no mere general claim of a principle or an art, comes much nearer to being the rule of the situation than where there are two parts of a machine which can be worked together but can also be worked separately.

Thus in *Cochrane* v. *Deener* (94 U. S., 780), which was a suit in equity for infringement of various patents relating to an improved method of bolting flour, the principal patent was for a process claimed not to be limited to any special arrangement of machinery. The court, considering various later devices alleged to infringe, and remarking that one

invention may include many others, and each and all may be valid at the same time, except that every inventor is precluded from using an invention patented prior to his own except by license from the owner, holds "that a process may be patentable irrespective of the particular form of the instrumentalities used;" that it may be immaterial what instrument or machinery is used to effect the object of the process; that if a patent is not confined to a particular tool or machine, the use of others appropriate would be an infringement, the general process being the same; and that:

> A process is a mode of treatment of certain materials to produce a given result. It is an act or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing. If new and useful, it is just as patentable as is a piece of machinery. In the language of the patent law, it is an art. The machinery pointed out as suitable to perform the process may or may not be new or patentable; whilst the process itself may be altogether new, and produce an entirely new result. The process requires that certain things should be done with certain substances, and in a certain order; but the tools to be used in doing this may be of secondary consequence.

Here was a process and its product; in the case at bar there is a process and a result or effect rather than product. But the court in *Cochrane* v. *Deener* undoubtedly shows that a process patent standing alone

will protect an inventor against its use through any instrumentality except so far as a prior patent for a particular instrumentality by a different process, although to produce the same or a similar product, may interfere.

Corning v. *Burden* (15 How., 252) was a contest between two puddling machines, although the claim in the specification of the senior patent was set forth in rather ambiguous and equivocal terms, which might be construed to mean either a process or machine. The court thereupon, in the body of the opinion and by notes and citations to the syllabus, explain the difference between a process and a machine—that the latter is a concrete thing consisting of certain devices or combination of devices; that its principle is properly defined to be its mode of operation or its peculiar combination of devices; that a machine is not a principle or idea, and that because the law requires a patentee to explain the mode of operation of his peculiar machine which distinguishes it from others, it does not authorize a patent for a mode of operation as exhibited in a machine, citing *Burr* v. *Duryee* (1 Wall., 531, 570). The court lays down the following doctrines in substance: that a process not being made the subject of a patent in the law *eo nomine*, is included under the general term "useful art;" that an art may require one or more processes or machines in order to produce a certain result or manufacture; that a machine includes every mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or

result, but that where the result or effect is produced by chemical action, by the operation or application of some element or power of nature, etc., such modes, methods, or operations are called processes, a process being usually the result of discovery as a machine is of invention. Industrial arts, like tanning, dyeing, smelting, etc., are usually carried on by processes as distinguished from machines. There may be a discovery of a new and useful improvement in such processes irrespective of any particular form of mechanical device or an invention of a labor-saving machine by which the process may be performed, and each would be entitled to a patent. "Each would be a patent for the means or method of producing a certain result or effect and not for the result or effect produced." "Process" used in that sense will include all methods or means which are not effected by mechanism. The court then proceeds to point out that the term is often used in a more vague sense which can not be the subject of patent, as where a board is undergoing the "process" of being planed, which use of the term represents merely the function of a machine or the effect produced on materials subjected to its action, it being well settled that a patent can not be granted for the function or abstract effect of a machine, but only for the machine itself.

Thus the decision pointed out and emphasized the distinction between a patentable process and the mere mode of operation or function of a machine or tool, or any mechanism employed to carry a process into effect.

In *James* v. *Campbell* (104 U. S., 356) the court again points out the difference between machine and process with reference to a combined device for canceling postmark and postage stamp at one blow, and says that under the guise of a patent for such device, although thereby it may be that the patentee was the first inventor of the general process of stamping and canceling at the same time, nevertheless there is no possible pretense for contending that this general process was part of the invention.

An idea and principle of operation in adapting a known and used article or vessel like a boiler (or the double tank here) to a new and special use by some added device does not seem to be patentable. (*Heald* v. *Rice*, 104 U. S., 737, 754, 755, citing *Hotchkiss* v. *Greenwood*, 11 How., 248, where the objection was that new materials which were merely better adapted than the old were not sufficient.)

Tilghman v. *Proctor* (102 U. S., 707) is an instance of the doctrine that a patent for a process is broader than the particular mode of applying and using the process pointed out in the specification, and is not for any specific mechanism for carrying the process into effect. That case at page 728 summarizes the law on these distinctions as drawn from the previous authorities thus:

> Whoever discovers that a certain useful result will be produced in any art by the use of certain means is entitled to a patent for it, provided he specifies the means. * * * It is very certain that the means need not be a

> machine, or an apparatus; it may, as the court says, be a process. * * * The one is visible to the eye. * * * The other is a conception of the mind, seen only by its effects when being executed or performed. Either may be the means of producing a useful result.

And the court in those passages touches upon the objections to process patents where they are claimed merely for a principle or idea which was one of the objections to the Neilson hot blast patent (although the patent was sustained in the Court of Exchequer in England, Web. P. C., 275, 371; and was approved in illustration by the comments of Mr. Chief Justice Taney in *O'Reilly* v. *Morse*, 15 How., 62, 115, 116). *O'Reilly* v. *Morse* has been considered to be "adverse to patents for mere processes." The mistake has undoubtedly arisen from confounding a patent for a process with a patent for a mere principle (102 U. S., p. 726); and the true distinction, as stated by Baron Parke relative to the Neilson patent is that "between a mere principle, as the subject of a patent, and a process by which a principle is applied to effect a useful result" (id., p. 724). A principle, a mode of operation, an idea, or any other abstraction is not patentable. (*Burr* v. *Duryee*, 1 Wall., 537.)

The Goodyear case (*Rubber Co.* v. *Goodyear*, 9 Wall., 788, 796), in which a process patent was sustained, illustrates and enforces the same distinctions. In that case the ordinary separability of claims between machine or apparatus, process and products, is indicated in the passage on page 796 where the court

points out that a machine may be new and the product or manufacture proceeding from it old, or *vice versa*, and so as to processes and their results:

> Patentability may exist as to either, neither, or both, according to the fact of novelty, or the opposite. The patentability, or the issuing of a patent as to one, in no wise affects the rights of the inventor or discoverer in respect to the other. They are wholly disconnected and independent facts. Such is the sound and necessary construction of the statute [referring to the act of 1836, sec. 6, now secs. 4886 *et seq.*, Revised Statutes].

In the Telephone Cases (126 U. S., 1) the important claim combined a method and apparatus. In sustaining the claim the court said that in what the inventor did there was both discovery in finding the art and invention in devising the means of making it useful. Reviewing the cases cited above, establishing the doctrines that a patent for an art does not necessarily involve a patent for the particular means employed for using it, and that an art—a process—which is useful, is as much the subject of a patent as a machine or manufacture or composition of matter, the court's conclusion was that a patent for such a discovery as Bell's is not to be confined to the mere means he improvised to prove the reality of his conception. (126 U. S., pp. 532–539.) But, as I understand that case, not only the discovery of the transmission of articulate sounds by gradually changing the intensity of a continuous

electric current was sustained, but also the particular apparatus devised, by which those changes could be made and speech actually transmitted. This union of process and apparatus in the fifth claim was upheld because of the intimate and necessary connection. At that time, in the infancy of the art, it is probably not too much to say the one was not only auxiliary but indispensable to the other; that is to say, although Rule 41 was not involved, as here, the patent was sustained as embracing both process and apparatus in one claim; and it is evident that if this technical rule had been involved, the intimate and necessary relation between process and apparatus would have justified joinder.

Now, it is obvious that just as "process" has a secondary and abstract meaning, so has "art" and, so far as art does not mean a practical and useful art—that is, so far as it is the mere expression of a general principle or law of nature—it is not patentable.

The deductions to be made from the foregoing résumé of the decided cases and the principles laid down are these: The general rule is that a patent must be for a single thing, invention or discovery, although a machine which is a combination of two devices susceptible of separate use, but used jointly in producing a joint product, may be embraced in a single claim; that a process is separable from any particular mode of carrying it into operation, and a patent for the one does not necessarily include the

other; that the function or mere method of operation of a machine is not patentable; that a general principle or idea, a law of nature, not developed into a process constituting a useful art, or not producing a new product or combination of matter, or resulting in a new effect, is not patentable.

Now, it may be suggested that in the foregoing discussion I have strayed from the subject and am endeavoring to analyze patentability rather than division of claims; but it is to be observed that the court in considering divisibility in the Steinmetz case cites the authorities which I have discussed, and that manifestly the rules underlying the inclusion of two inventions or discoveries in one patent control the matter of division of claims.

Yet it must be admitted that the court in holding in the *Steinmetz* case and *Ex parte Frasch* that there may be joinder if the inventions are related and dependent, has gone far in qualifying these doctrines of its previous decisions and in modifying Rule 41. The rule certainly was that joinder could not be permitted unless the inventions were essentially related or connected in their design and operation; and perhaps now in holding that the rule does not require division between process and apparatus, "if they are related and dependent inventions," the emphasis has been shifted a little in favor of joinder. But the question simply and always is: Are the two parts of the claim so closely related as to come within the rule as now construed, it seems, more liberally? I add this *semble* because

on close analysis of *Steinmetz* v. *Allen* and *Ex parte Frasch* no fundamental change appears to have been made in the rule, but each case would stand upon its own facts as to the degree of nearness of the process and apparatus, and every case is subject to the discretion of the Commissioner, which, if not unlimited, plainly has a real scope, because the court says that it will not be reviewed except in cases of clear abuse.

Coming, then, to the case at bar, and seeking to apply the proper tests, let us analyze the claims herein and the action of the examiners and the Commissioner thereon.

The claims appear in the record on pages 21 and 22, in red figures (following the specification on pp. 16–21 in red), and again at pages 48 and 55. Claim 1 is for:

> The process of removing incrustations of calcium sulphate from heating surfaces, consisting in condensing steam in contact with said surfaces by carrying off the heat from the opposite side of the heat-conducting walls, substantially as described.

Claim 2 amplifies, specifies and limits the method of condensing the steam by carrying off the heat, as follows:

> By transferring its heat to brine of lower temperature on the opposite side of the heat-conducting walls, and so carrying off the heat, the steam and brine being applied alternately to each side of said heat-conducting walls, so that the heating of the brine and the removal

of the incrustation from a previous heating proceed together, substantially as described.

The differences in claim 3 are that the brine is described as saturated boiling brine, and the statement of the result is "so that the evaporation of the brine with precipitation of salt," and removal of the incrustation proceed together, instead of "so that the heating of the brine," etc.

These three claims are the process claims. Claim 4 is the first apparatus claim, and is:

> An apparatus divided into chambers by heat-conducting walls, and provided as to one chamber with a steam-supply pipe, a brine-supply conduit, and means for withdrawing the products of the steam-condensing and brine-heating operations, and as to other chamber with a steam supply pipe, means for supplying a cooling medium, and means for withdrawing the products of the steam-condensing and the cooling-medium-heating operations, substantially as described.

Claims 5 and 6 are merely briefer statements of the apparatus stating the means for withdrawing the products of the alternate operations, in No. 5 without any specification, and in No. 6 with less specification than in claim 4.

The examiner held (pp. 48, 55) that the applicant must acquiesce in the requirement of division unless he can show that the process and apparatus (or its function) are so closely related that it is difficult to distinguish between them; that this apparatus has nothing whatever to do with the object of the process, the removal of incrustation of calcium sulphate

from heating surfaces; and he emphasizes the discretion remaining in the Patent Office.

The majority of the examiners in chief (pp. 55–72) construed the decision of the court in the Steinmetz case to mean that while an art and a machine to perform it are presumptively independent inventions, and may not be claimed in the same application, where they are so dependent as to constitute a unitary invention, they may be so claimed. Applying that test of the relation and dependence here, after stating the fundamental principles of patentable inventions under the statute and decisions, they analyze the specification and drawings, and declare that so far the art of heating by using steam conductively is disclosed but not claimed, and therefore is admitted to be old, as it is indeed of common application; and that the two-chamber apparatus is not claimed, and is therefore also admitted to be old, being, in fact, of common use wherever temperatures are to be raised or lowered. That is to say, so far there is an old art and an old apparatus working the old art; that the first of the method claims discloses another art, namely, the dissolving and washing by steam from the heating plates of the old apparatus calcium sulphate incrustations deposited by brine from its subjection to heat; that the process or art is useful only to remove the incrustations and is limited to that use, but that the claim undertakes to be unlimited by any particular liquid for the operation and treatment; that claim 2 limits the heat to steam and the liquid to brine, and

covers the mere use of the same process on the other side of the plate, and a process simply used in a different place in the same machine does not make a different process; that the only difference between claims 2 and 3 is that in the latter the brine is to be hotter and stronger and the heating is to result not merely in evaporation and condensation but rather in precipitation of salt.

Similarly analyzing the apparatus claims, each of which calls for a two-chamber machine and is limited to brine use, they find that in claim 4 the operation of the arrangement is not alternating, and that claims 5 and 6 clearly and concisely claim the apparatus, the former to effect heat only with or without evaporation, the latter to effect precipitation of salt. As a result of their analysis they find that, taken together, the art claims do present a real art, and the machine claims taken together a real machine; but proceeding to determine whether under the facts developed the relation between process and apparatus is so close as to constitute one invention, they conclude that upon the tests of capability of separate novelty and capability of separate use, the art is independent of the machine, and the two inventions not being unitary must be claimed in separate applications. There was a dissent (p. 72), the third examiner in chief holding that division should not be required, and that the case should be examined on the merits (as to patentability), suggesting, however, that such examination might result in the rejection of the process claims as amounting to no more than the functions of the particular apparatus.

The Commissioner (p. 82) held that:

> The process which consists in condensing steam upon an incrusted surface, and apparatus which consists of two chambers separated by a heat-conducting partition, and provided with certain inlets and outlets, have so little in common, and there is such an utter absence of necessary relationship between them, that it is difficult to see upon what theory they could be regarded as one invention or as dependent inventions.

But he held that claims 2 and 3 are so far further limited than claim 1 that, without passing on the question whether limitations to the use of a particular apparatus can be considered proper steps of a process, they contained such limitations that the requirement of division should not be insisted upon as to them. He concludes that claims 2 and 3 may be joined with claims 4, 5 and 6, but that claim 1 should be made in a separate application. It is manifest from his language ("a mere mode of operating apparatus cannot be regarded as so unrelated to the apparatus itself that division can be required between claims to processes which amount to mere statements of the former and claims to the latter") that he permitted the second and third process claims to be joined with the apparatus claims, apparently because he was of opinion that they presented merely the function or a mode of operating the machine.

I have little to add to this abstract of the proceedings in the Patent Office and the reasoning of its offi-

cers. It is found that there is an art or process and a machine, and that they are properly divisible. The joinder of process claims 2 and 3 with the apparatus claims being now allowed, we have only to consider whether the general process claim No. 1 is separable from the apparatus claims and the limited process claims which are now so joined and appear to be no more than functional; or whether the general process is so related and dependent as to call for union in the same application. It may be pointed out that while its usefulness is conceded (although its novelty does not appear to be), and while we are not now dealing with patentability, claim 1 is a very general statement of a principle or idea, namely, the law and effect of the ordinary dynamics of steam and that the art may be performed in an entirely different way from the mode of the particular apparatus (p. 71). Further, the union of process and apparatus or apparatus and product or process and product, differing from the union of two machines capable of separate use, but also capable of advantageous joint use, is a union of two different categories of patentable inventions or discoveries, and should be allowed, if at all, with particular caution and scrutiny. Undoubtedly the court in the two recent cases, by its modification of previous decisions and the previous rule of the Patent Office, set the limits in favor of a liberal construction against a hard and fast rule requiring division at the Commissioner's uncontrolled discretion. The limits now ought also to be set in the other direction in favor of maintaining some rule and some discretion,

because if the appellant can in this case compel union for such a process claim with such functional and apparatus claims, it is difficult to imagine any case presenting any relation whatever between the two, however general and vague, in which joinder could not be forced, and in that event nothing but a shred of the Commissioner's discretion would remain, in the face of the court's declaration in the *Steinmetz* case that "discretion can be exercised, and when exercised, we may say in passing, except in cases of clear abuse, the courts will not review it."

Further, the *Steinmetz* case is the first decision of the court on the Patent Office rule as to divisibility, applying the principles of cases on patentability to that rule. Manifestly it is true, as suggested by the examiners in chief, that the courts, in order to secure his reward to a meritorious inventor, might go far to sustain a patent for two or more inventions where dependence is very doubtful, in a contest over patentability. But it does not follow that the Patent Office must permit such inventions to be claimed in one application; and the effect of the *Steinmetz* decision ought not to be extended any further.

I respectfully submit that the appeal should be dismissed and the application for certiorari denied, or the judgment below be affirmed.

HENRY M. HOYT,
Solicitor General.

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